DECEMBER 2, 1944

Railway Age

Founded in 1856

The Library of Congress Serial Record
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WINE LOCKS

ON MORE THAN

390,000 CARS

ENGINEERED TO STOP LOSS OF LADING

THE WINE RAILWAY APPLIANCE CO.
TOLEDO, OHIO

WINE

Reliance HY-CROME Spring Washers

THERE *Must* BE A REASON?

"Tension There In Spite of Wear"

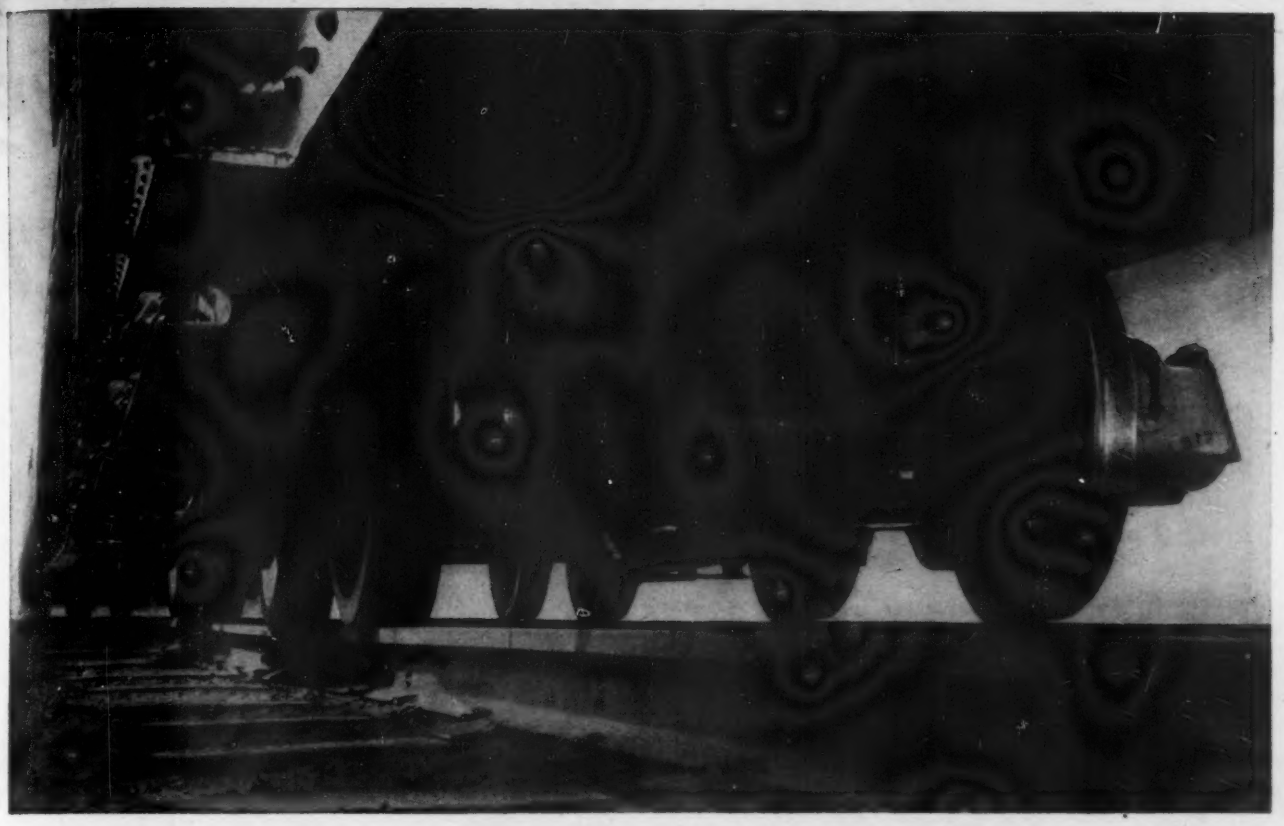
● It is not entirely the quality control of **HY-CROME** Spring Washer manufacture, or the extensive laboratory or field research, which dictates their design and physical properties. *It Is the Way They Do Their Job.*

● **HY-CROME** Spring Washers have grown in use yearly because they function successfully in keeping motive power bolts tight and under constant and adequate tension to compensate for looseness resulting from wear. *They Can Do a Job for You.*

● In 1944 **HY-CROME** applications established many service records, as well as providing, more efficiently and economically, longer life for motive power assemblies.

Write for Motive Power Folder No. 200

EATON MANUFACTURING COMPANY
RELIANCE DIVISION MASSILLON, OHIO
Sales Offices: New York • Cleveland • Detroit • Chicago • St. Louis • San Francisco • Montreal



Keep rolling stock rolling

Bethlehem wheels are built for the higher speeds, heavier loads, and longer runs demanded by wartime service . . . conditions that offer the most severe proving grounds in the history of the railroads. And today, in the face of these rigorous demands, thousands of Bethlehem wheels are working 'round the clock, day after day, doing the same good railroad job that they did in the peacetime years.

For safe, low-cost mileage and insurance against delays, install Bethlehem wrought-steel wheels and forged-steel axles. There are no finer made anywhere, and they're backed by one of the world's largest manufacturers of railroad equipment.

Bethlehem Wrought-Steel Wheels

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 117, No. 23.

SKILLED WORKMANSHIP—EXPERT

MT. VERNON CAR DIVISION:
Complete Line of Freight Cars

LOCOMOTIVE DIVISION:
Diesel, Diesel-Electric, Electric, Steam, and Fireless Steam Locomotives.

PROCESS EQUIPMENT DIVISION:
Complete Line of Chemical, Food, and Petroleum Refinery Equipment.

QUIMBY PUMP DIVISION:
Screw, Rotex, Centrifugal, Chemical Pumps.

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Projectiles, Heavy Forgings, Breech Blocks, Winches.

MT. VERNON C

Division of **H. K. PORTER C**

General Offices: PITTSBURGH 22 PE

Factories at **Mt. Vernon, Ill.** **Pittsburgh, Pa.** **Newa**

SUPERVISION—
MODERN EQUIPMENT—

..these are the factors that account for the extra measure of endurance built into

MT. VERNON CARS

N CAR MFG. CO.
ER COMPANY, INC.
22 PENNSYLVANIA
Pa. Newark, N. J. New Brunswick, N. J. Blairsville, Pa.

PORTER
"Better Built" Equipment
Established 1866

As of the present, we've turned out a huge tonnage of work for Army Ordnance and the Navy. Some of the castings were so big you'd hardly believe it when you saw them—others, like the rudder post and stern tubes for naval craft illustrated here, were less imposing in size. But, big or little, all were equally important, and all partook of the qualities of correct analysis and grain structure, clean sound strength and dimensional accuracy that are characteristic of PSF castings at any time, and for any purpose. Include "Castings by PSF" in your coming plans.

WAD 9602

46 YEARS OF STEEL CASTING KNOWLEDGE

Pittsburgh
STEEL FOUNDRY CORPORATION

GLASSPORT, PA.

Sales Offices: NEW YORK • PHILADELPHIA • WASHINGTON AND CHICAGO

THE BLIMPS GET A LIFT

Only part of the story of how U.S. railroads have backed up the blimps in smashing the German submarine menace can be told.

Down in the Texas panhandle, at places like Exell and Soncy, near Amarillo, the U.S. Bureau of Mines has great plants which capture from natural gas that precious noninflammable gas—helium. Millions of cubic feet are produced each month to play a vital role in the safe operation of our lighter-than-air fleet.

But it's 2000 miles from the Panhandle to where the blimps rendezvous—and that's where the Rock Island, the Santa Fe, and other railroads come in.

Down there on the plant sidings in Texas they load the cars that carry the helium east—each car with 28 or 30 cylindrical containers holding, altogether, 200,000 cubic feet of gas. A flexible tube goes to the cylinders, the gas flows in, tank after tank is filled, another car is pushed up, and the operation begins again.

You might think helium, one of the lightest of all gases, would make the car lighter, but instead, the car is 2000 pounds heavier—because the helium comes in under pressure and exerts no lifting power.

The railroads can't be casual about this service, because the plants run most efficiently when they run continuously. Despite all the stress of wartime, no helium plant has had to slow down through failure of the rails to supply the empty tank cars as they were needed.

We're turning out 25 times as much helium as in prewar days, and, of course, it goes not alone for the blimps, but also for barrage and meteorological balloons, and for industrial and medical uses.

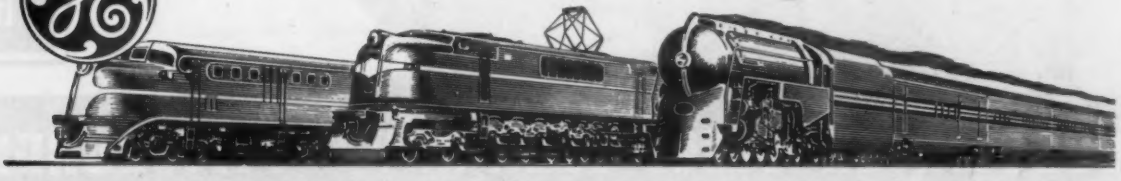
Helium is just one more of the essential weapons of war that U.S. railroads are laying down day after day in places where they'll do the most good. And they'll not relax the pace until the enemy is beaten all around the world.

*—The Trackwalker**

★ ★ ★

Alco GE

Interchange time of tankers arriving at the St. Louis Gateway with one third of all eastern seaboard oil has been slashed to 3-¾ hours by the Terminal Railroad Association. Its efficient terminal operations are supported by 12 Alco-G.E. diesel-electrics whose 95 per-cent availability permits setting up switching operations in advance of each train's arrival.



AMERICAN LOCOMOTIVE • GENERAL ELECTRIC

Copr., 1944, American Locomotive Company and General Electric Company **Reg. U.S. Pat. Off.*

113-108-9000

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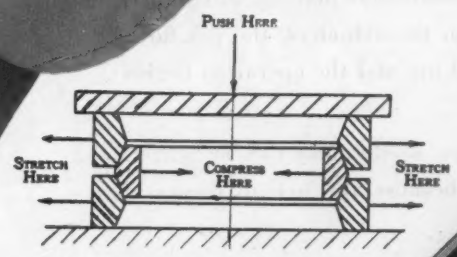


PRINCIPLE OF THE RING SPRING

Burlington Route

EDGEWATER STEEL COMPANY · PITTSBURGH, PA.

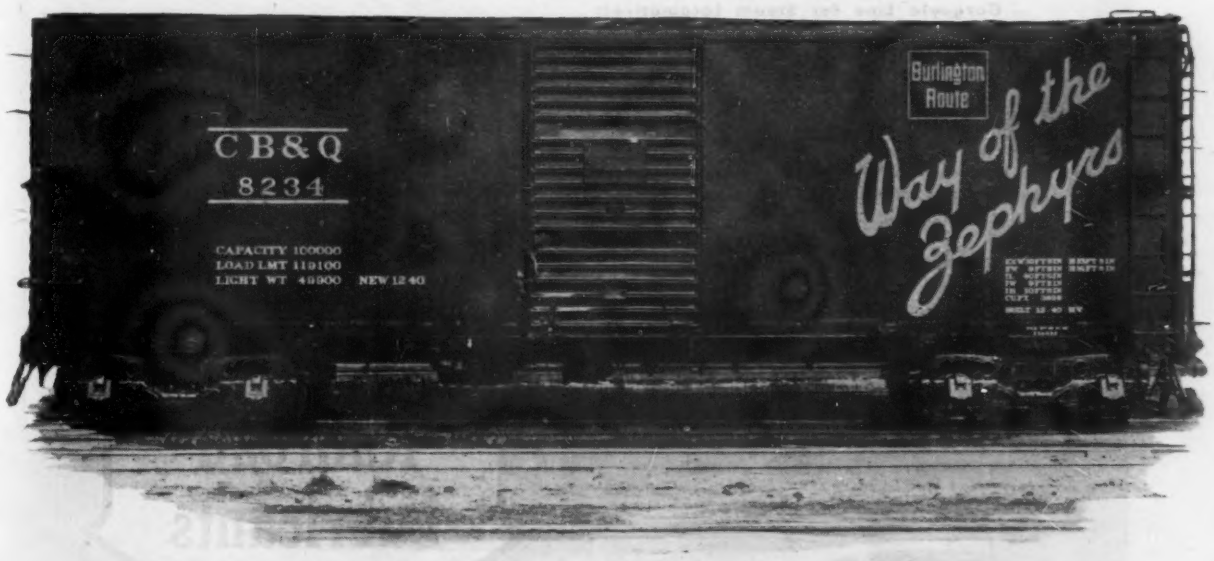
...ater DRAFT GEARS

LONG LIFE

through EDGEWATER'S exclusive RING SPRING PRINCIPLE

THE ring spring, in which energy input results in a single uniform stress in each spring part, permits more efficient use of metal than any other spring type. The ring spring principle, incorporated in Edgewater Draft Gears, guarantees high capacity during a long life.

AAR Endurance Tests show only a negligible drop in capacity and assure long protection for equipment and lading. Mechanical executives will profit from reading the results of these tests on Edgewater Draft Gears. These authoritative engineering data will be sent on request.



Chicago, Burlington and Quincy Railroad box car number 8234 built in 1940.

Atlanta, Ga. Baltimore, Md. Boston, Mass. Chicago, Ill. Cleveland, O. Kansas City, Mo. Louisville, Ky. New York, N.Y.
Philadelphia, Penna. St. Louis, Mo. St. Paul, Minn. San Francisco, Calif. Seattle, Wash. Washington, D. C.

RAILROAD MEN REALIZE THE NEED FOR STILL
IN TRANSPORTATION SERVICE FROM

Help for Proper Care Shops, Maintenance-

NEW PRODUCTS, CONSTANT RESEARCH FOR *Correct Lubrication* OF AMERICAN RAILROADS!

New Diesel Lubricants and Fuels: Socony-Vacuum pioneered Diesel lubrication and has kept ahead of Diesel development with new Gargoyle Lubricants to meet today's severe service.

Gargoyle Line for Steam Locomotives: Socony-Vacuum's complete line of Gargoyle Lubricants includes the correct oil or grease for every moving part in every type of steam locomotive.

For Trucks, Buses, Autos: On proved, low-cost performance, Socony-Vacuum's automotive lubricants have become favorites of truckers, bus operators and motorists. They're dependable protection for railroad "feeder" equipment.

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Lubrication Research: Socony-Vacuum Research Laboratories are constantly improving present products and developing new products to help increase the efficiency of your operations and preserve your hard-working equipment.

Engineering Service: Socony-Vacuum has a staff of experienced railroad lubrication engineers whose sole responsibility is to work with you on your problems. Their recommendations are backed by the greatest lubrication experience in the world.

GARGOYLE

Railroad Lubricants

GREATER EFFORT TO GET THE UTMOST
THE RAILROAD PLANT. HERE'S...

of Rolling Stock, of-Way Equipment!

Socony-Vacuum's 78 Years of Lubrication Experience is at Your Service!

FAR BETTER than anyone else, you railroad men yourselves realize the tremendous job still to be done by American railroads. You've stated it concisely and clearly in your messages to the public, as expressed by your Association of American Railroads:

"The road ahead calls for still more effort, still closer cooperation, in getting the utmost transportation service out of our railroad plant."

Socony-Vacuum is assisting you in this greater effort, by giving you this closer cooperation to help solve your greatest problem —the preservation of your present railroad facilities and equipment.

To protect and lengthen the life of your rolling stock, our railroad lubrication engineers are offering you the highest quality oils and greases for every moving part—backed by the greatest lubrication experience in the petroleum industry.

For puzzling lubrication problems arising in your over-worked shops, these same men are at your service with the most complete line of industrial lubricants in the world. Back of them, Socony-Vacuum laboratories are working day and night on current railroad needs.

And for vital maintenance-of-way equipment—automotive-type Diesels and heavy-duty gasoline engines—your Socony-Vacuum representative offers the famous Delvac Series Oils, now serving the armed services on every front.

All of these Socony-Vacuum Services and products are proving invaluable in your present war effort. And when peace comes, they'll be just as essential in your carefully laid plans to keep maintenance and lubrication costs to a minimum. We invite you to take full advantage of them.

SOCONY-VACUUM OIL CO., INC.

Standard Oil of New York Division • White Star Division • Lubrite Division • Chicago Division • White Eagle Division • Wadhams Division Magnolia Petroleum Company • General Petroleum Corporation of California

★ ★ *ALUMINUM COMPANY. Timber Structures, Inc. prefabricated 27-58' Pratt trusses for this 60' x 400' stores building at Canonsburg, Pa.*

DEPENDABILITY IS IMPORTANT

...BUILD WITH TIMBER STRUCTURES

A business is known by the people it serves. At Timber Structures it has been our pleasure to work with some well known American railroads; with the Army and Navy; with various governmental agencies.

Typical of the timber fabrication assignments that we have been privileged to handle are:

New York Central Railroad. Roof trusses for engine house, East Syracuse, N. Y.

Erie Railroad. Roof trusses for passenger station, Ashland, Ohio.

C. M. & St. P. Railroad. Roof trusses for freight warehouse, Seattle, Wash.

Army. Roof trusses and other heavy members for warehouses, hangars, barracks, miscellaneous structures.

Navy. 72% of the timber requirements for Navy's comprehensive LTA hangar program—involving more than 30 million board feet of fireproofed timber; also millions of feet of fabricated lumber for other structures.

Defense Plant Corporation. Roof trusses, other timber items for the construction of plants to produce synthetic rubber—other vital necessities.

Timber Structures is proud of these and other associations. They indicate dependability on our part; a satisfactory record as timber prefabricators; engineering know-how and an ability to fulfill commitments as promised.

Equally important, they indicate an appreciation of the dependability of timber as a construction material; and a recognition of timber's virtues: strength, economy, versatility, speed in erection, low maintenance, long life.

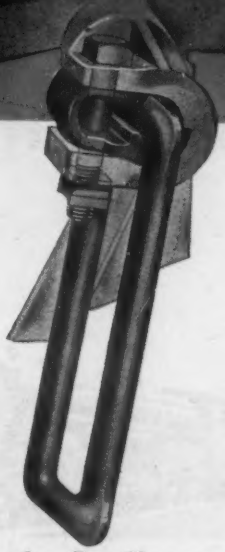
Your current or postwar building program may be such that you can profitably use our services. Inquiries are welcomed on the use of timber and allied structural materials. Write nearest office for literature.

Engineering in Wood

TIMBER STRUCTURES
WARD MAYER
INCORPORATED
Portland 8, Ore. New York 17, N. Y.

Lighter

Stronger Better



Schaefer Appliances

STANDARD ON MOST ROADS

For High Speed Service
Use the New

Schaefer EVER-TITE Wear Plate

In the new Schaefer EVER-TITE wear plate, springs are introduced into the wear plate to save needless wear on the side frame brackets. The entire plate assembly is designed to fit firmly into side frame bracket, eliminating play and resultant wear. Especially recommended for high speed freight service.

LIGHT WEIGHT DESIGN INSURES MORE THAN CAR LIFE

Schaefer **EQUIPMENT COMPANY**

KOPPERS BUILDING • PITTSBURGH, PA.

DROP-FORGED FOR LIGHT WEIGHT, HIGH STRENGTH, LONG LIFE AND SAFETY

Vital Links for Industry

Fluid-conveying pipes carry the life-blood of industry and transportation. Vital links in these conveyor systems are Barco Flexible Joints—enemies of vibration and shock. Providing responsive movement through every angle, Barco compensates for all stress and strain, expansion and contraction. Over 30 years' experience in solving flexible joint problems is yours when you consult Barco's engineering department.

In Canada: The Holden Co., Ltd., Montreal, Canada

BARCO ***FLEXIBLE JOINTS***

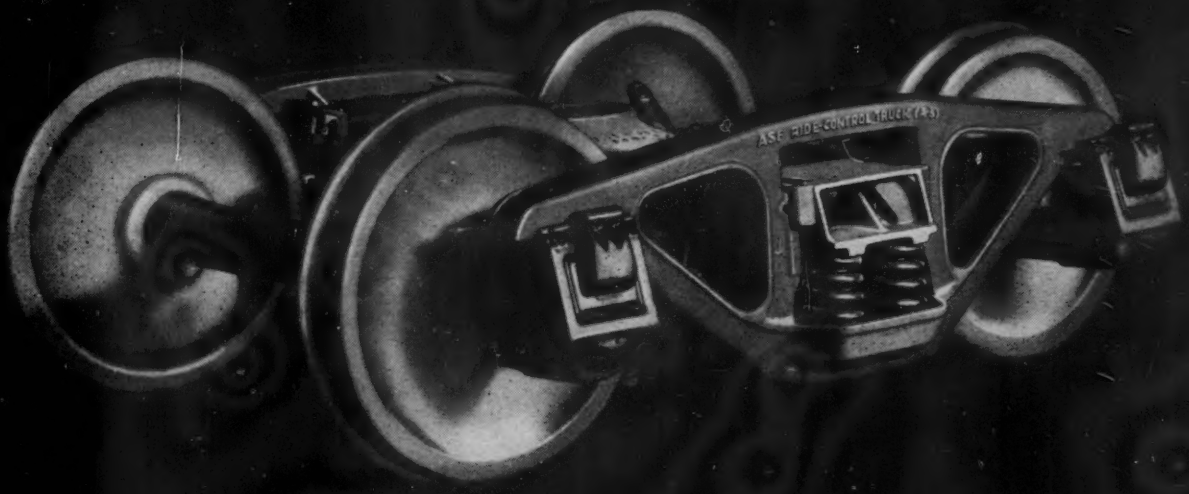
MANUFACTURING CO., NOT INC. • 1800 Winnemac Ave., CHICAGO 40, ILL.

Not just a swivel joint...but a combination of a swivel and ball joint with rotary motion and responsive movement through every angle.

THE FREE ENTERPRISE SYSTEM IS THE SALVATION OF AMERICAN BUSINESS

"MOVE IN EVERY DIRECTION"

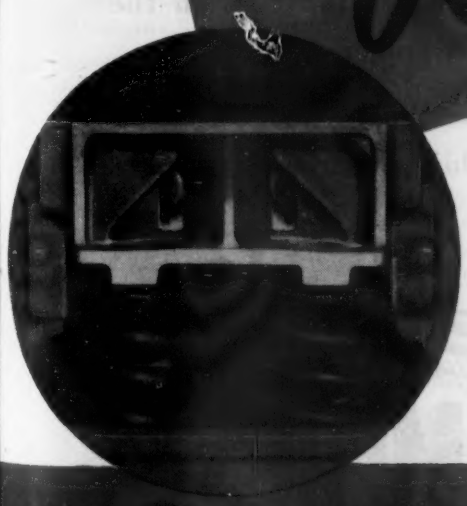
THE TRUCK FOR TODAY'S NEED...TOMORROW'S SPEED!



For more MILEAGE and less MAINTENANCE...

Ride-Control!

NO SPRING PLATES
NO SPRING PLANKS



The A. S. F. Ride-Control Truck (A-3) can be depended upon for easy-riding, high-speed service with low maintenance expense. And chief among the reasons-why is the fact that the Ride-Control prevents the development of destructive harmonic oscillation. All bolster motion, both vertically and laterally, is cushioned and controlled by spring pressure to assure smooth, easy operation. Then, too, the Ride-Control Truck is rugged and simple in construction. Without spring plates or spring planks, providing the simplest of assemblies, this truck is designed to keep more freight cars moving, more of the time.

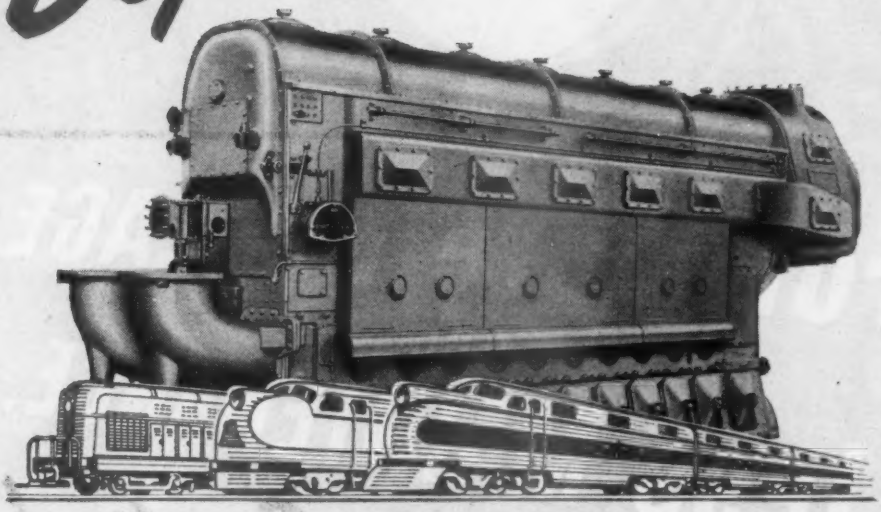
AMERICAN STEEL FOUNDRIES

CHICAGO

MORE-MILES PRODUCTS OF CAST STEEL

Tops in Locomotive Diesel

Dependability



THE U. S. Navy has used Fairbanks-Morse Opposed-Piston Diesels for five years... rates them so high in dependability that more than two million horsepower are now in Navy service.

These same Diesels now bring their proved dependability to Fairbanks-Morse Locomotives... assure high availability on the heaviest assignments.

Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

BUY MORE WAR BONDS

A name worth remembering!

FAIRBANKS-MORSE

Automobile bumpers, cold-formed from N-A-X HIGH-TENSILE STEEL, illustrate the ability of this fine alloy to take the stresses of a critical cold-stamping operation. Result: a tougher, more satisfactory product at reduced fabricating costs.

THIS HIGH-TENSILE STEEL "TAKES OVER" WHERE DRAWING STRESSES ARE TOUGH

N-A-X HIGH-TENSILE STEEL has stepped into some tough spots in the production of intricate shapes. It has proved to production men that here is a great steel to work with, from the standpoints of both manufacturing operations and finished performance.

To put it in a few words, N-A-X HIGH-TENSILE STEEL has what it takes to make a stronger, tougher product through more efficient production methods. Its exceptional ductility and resistance to impact, inherent in the fine grain structure of a great alloy, often make possible the speed and economy of cold-forming on pieces which must be worked hot when other grades of steels are used. And where critical drawing stresses require hot work, N-A-X HIGH-TENSILE STEEL provides the important advantage of maintaining its high physical properties with minimum cooling distortion even after it has been subjected to a wide range of temperatures. No subsequent treatment is needed to maintain "as rolled" specifications.

Add to these advantages the high fatigue life and resistance to corrosion and abrasion that qualify N-A-X HIGH-TENSILE STEEL for varied types of applications, and you'll see why this fine-grain, low-alloy steel is a factor in postwar planning. Great Lakes Steel metallurgical service is yours on request: Let's have your problem.

GREAT LAKES STEEL
Corporation

DETROIT 18, MICHIGAN • SALES OFFICES IN PRINCIPAL CITIES
Division of NATIONAL STEEL CORPORATION. Executive Offices, Pittsburgh, Pa.

GREAT STEEL FROM GREAT LAKES

HIGHLIGHTS OF N-A-X ALLOY STEEL

N-A-X HIGH-TENSILE STEEL compares favorably with other low-alloy high-tensile steels in yield and tensile strength, with outstanding ductility and notched bar values. In applications where it replaces mild-carbon steels, it serves to reduce weight or increase strength through the utilization of these properties in design.

Another property that may interest you is the excellent weldability of N-A-X HIGH-TENSILE STEEL—whether welded to itself or to other high-tensile or structural steels of welding quality.

N-A-X 9100 SERIES STEELS are produced in carburizing and constructional grades. Except for carbon, they have a chemical analysis that is constant within definite ranges. Together with X-9100 Series steels, containing molybdenum, they provide hardenability ratings to cover a wide variety of requirements, yet give an all-purpose analysis to yield properties. Molybdenum confers great depth hardenability to extend the usefulness of the N-A-X 9100 Series, which are medium-hardening steels.

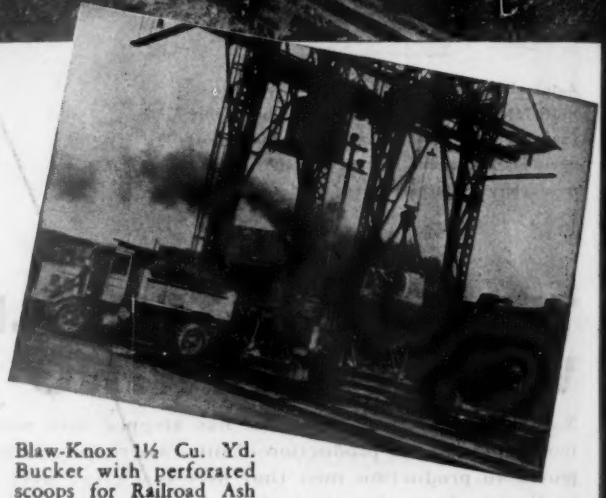
N-A-X ARMORPLATE is an example of the exacting requirements that Great Lakes can meet with this low-alloy series. One of the X-9100 Series steels is the basis of the armor we produce for tanks, armored cars and practically all landing craft.

BUCKETS for all Railroad Jobs

No one industry puts buckets to such a wide variety of uses as do the railroads. On most of America's busy railroads you will find Blaw-Knox Buckets handling coal, sand, ballast and ashes. Others are digging and doing other jobs for which they were *specially designed*. Regardless of the material to be handled, the crane capacity, the head-room and operational difficulties, you will find a Blaw-Knox Bucket that will do more work with less crane time due to its correct design.

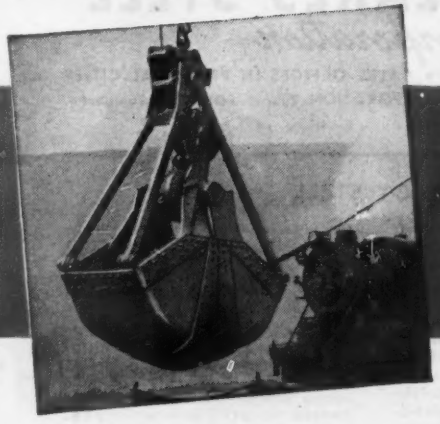
Ask Blaw-Knox about Clamshell Buckets for Railroad Service.

BLAW-KNOX DIVISION
of Blaw-Knox Company
2061 Farmers Bank Building, Pittsburgh, Pa.
New York Chicago Philadelphia Birmingham Washington
Representatives in Principal Cities



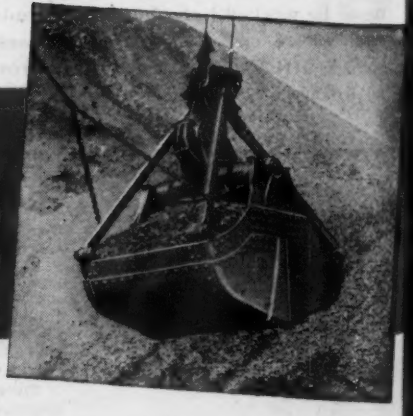
Blaw-Knox 1½ Cu. Yd. Bucket with perforated scoops for Railroad Ash Pit Service.

BLAW-KNOX *Clamshell* BUCKETS



Blaw-Knox 1¼ Cu. Yd. Round Nosed Bucket used for ballast cleaning.

Blaw-Knox Eight-ton Coal Bucket. Actual Operating capacity 4400 tons in eight hours. River-rail transfer service.

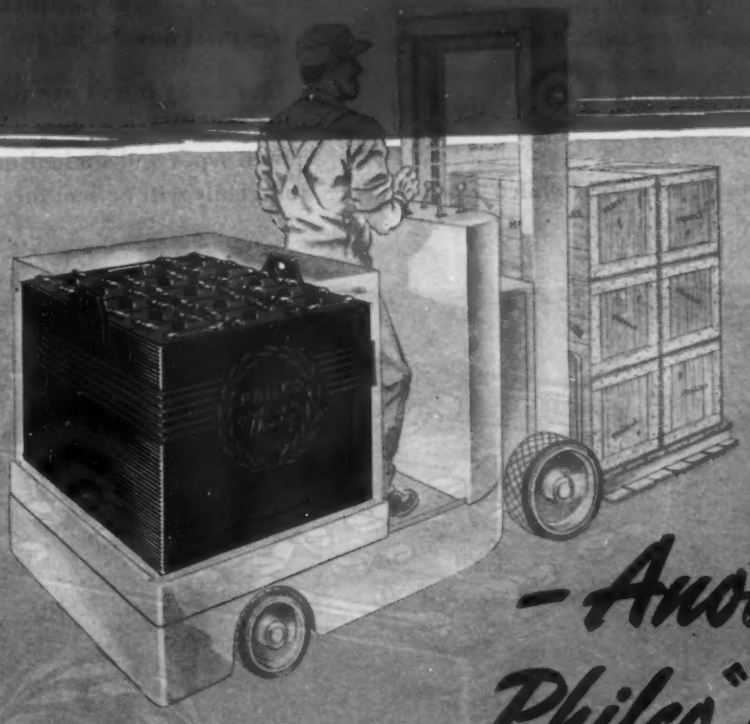


Blaw-Knox Light Weight Alloy Steel Bucket for fast rehandling of coal.

PHILCO

Again in the News

THE BATTERY THAT GIVES 30% LONGER LIFE



–Another Philco "First"

Revolutionary new

PHILCO "THIRTY"

WITH 30% LONGER LIFE RADICALLY CUTS MOTIVE POWER BATTERY COST!

★ *Reduces depreciation and maintenance*
★ *Gets more work done*
★ *Packs a terrific wallop*

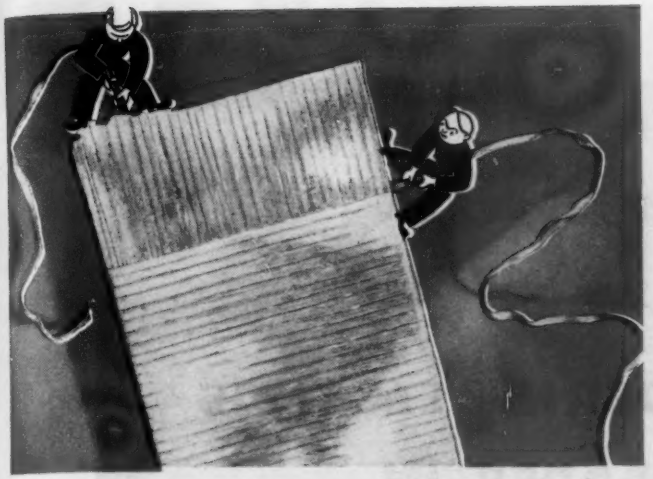
What every materials handling man wants in a storage battery is **packed** into this amazing new Philco "Thirty."

In high capacity, it is **tops** in the field—assuring the maximum tonnage every shift. Even after long hours of heavy work, it has the reserve power to climb ramps and grades, and complete the shift in *high*.

But the feature which sets the new Philco "Thirty" entirely apart from all other batteries you have known, used, or even heard of before—is its phenomenal long life. **30% longer life**—often more—has been demonstrated time after time in exhaustive field tests.

Here, then, is more than just a new and better battery. Here is a new standard of battery performance—*and* a new yardstick by which all battery values must now be judged.

That's why it will pay you to get posted on this great new Philco Battery which is now available in certain types and limited quantities. Full information gladly will be sent on request.

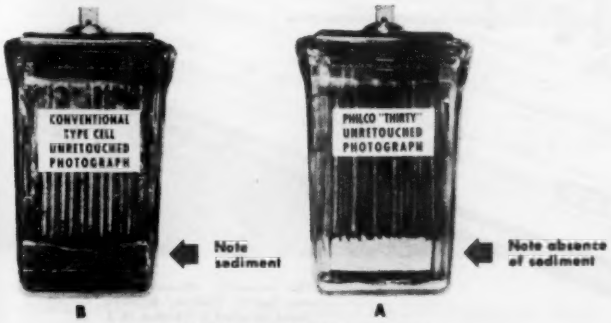


REVOLUTIONARY NEW PRINCIPLE OF PHILCO FABRICATED INSULATION*

Only PHILCO "THIRTY" has it!

Here is a brand-new construction principle *and* an ultra-modern application of a proven insulating material. Both the results of Philco pioneering! This material is fabricated glass tape wrapped around the positive plates in two layers, first vertically and then horizontally. Even a single layer of this glass tape insulation has been found to have better retentive power in holding the active material in the plate, than the standard glass mat! And—of course, the plates of the Philco "Thirty" are further protected and insulated with the time tested Philco slotted rubber retainer and rubber separator. **Patent applied for*

YOU GET IT FIRST WITH **PHILCO**



PROVED BY YEARS OF FIELD AND LABORATORY TESTS

As proved in scores of service tests, these unretouched photographs show what happens when a Philco "Thirty" cell (A) and a conventional type cell (B) are tested side by side in motive power cycle service, charged and discharged in series in the same circuit. Glass jars were used here only to permit observation. Note almost total absence of sediment in the Philco "Thirty", while the sediment space of cell B is filled. Cell B has delivered its normal life expectancy and is worn out—while the Philco "Thirty" still delivers over 100% of rated capacity, with a long margin of serviceable life still to go.

THE CLIMAX OF 50 YEARS OF LEADERSHIP IN BATTERY RESEARCH AND ENGINEERING

The procession of Philco "Firsts", covering the whole field of motive power and stationary batteries, has set the pace in modern battery design. Check the developments, which have contributed most to today's higher capacities, increased efficiency, longer life, and lower cost—the record shows *you get it first with Philco.*

PHILCO VITRABLOC

A development for telephone, control and standby service, that materially increases battery room capacities.

PHILCO FLOTÉ

The battery that exerted a major influence on the wider use of full float service, by eliminating low cells. More efficient . . . more economical to maintain.

PHILCO HIGH CAPACITY CELLS

Through modern plate design, Philco showed the way to increased capacity without increase in over-all battery dimensions. A tremendous advantage in many motive power operations.

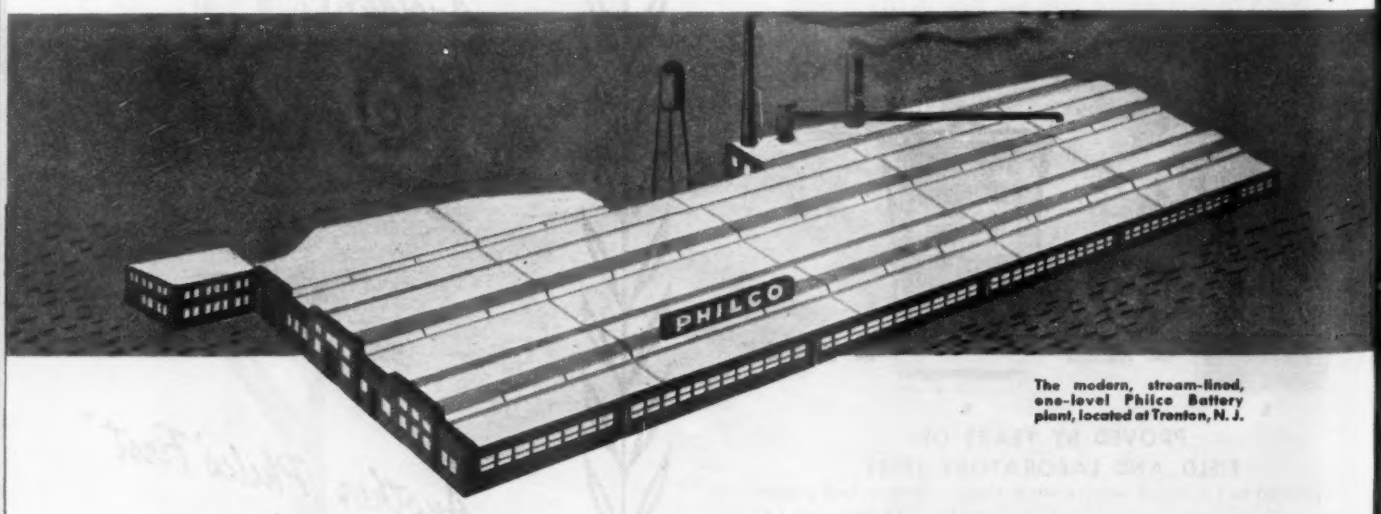
PHILCO

BUILT FOR MODERN DEMANDS BY THE LEADER IN MODERN BATTERY ENGINEERING

As described in the foregoing pages, Philco is ready, today, with the advanced battery performance and long-life economy you'll need in your post-war operations. With model manufacturing facilities, Philco is ready to produce these superior batteries in greater volume than ever before.

In the complete Philco line are modern storage batteries for all industrial applications—industrial trucks, mine locomotives and shuttle cars, diesel starting, railroad car lighting and air conditioning, control and power, telephone service and signal systems.

On your next purchase of batteries specify a modern Philco.



The modern, stream-lined, one-level Philco Battery plant, located at Trenton, N. J.

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STORAGE BATTERY DIVISION • TRENTON 7, NEW JERSEY

For 50 Years a Leader in Industrial Storage Battery Development

7 REASONS* WHY

Your best bet for AC Welding is a "Bumblebee"

with a *Stinger that Penetrates*

Every feature of design and construction, both inside and outside the sturdy case of the Wilson "Bumblebee", has been planned to give the utmost in efficient, dependable and economical service:

1. *Precise, Stepless Adjustment of Welding Current* to any value within NEMA range, provided by easy-turning crank.
2. *Efficient Ventilation* by motor-driven fan assures safe, dependable operation, even when welding with maximum current.
3. *Reduced Power Factor Charges* and relief for overloaded power lines is provided by built-in capacitors.
4. *Coils Protected Against Fire and Vermin* by mica and glass fabric insulation.
5. *Interchangeable Primary Terminals* permit easy, rapid change from low to high line voltage or vice versa.
6. *Output or Secondary Terminals Readily Accessible* by removing 4 screws which hold small insulating panel.
7. *High Visibility of Current Indicator* is assured by large, easily read calibrated scale located outside case.

These features are incorporated in every "Bumblebee" welder—either regular or all-weather model. "Bumblebee" welders are also performing a valuable service as a power source for automatic welding heads.

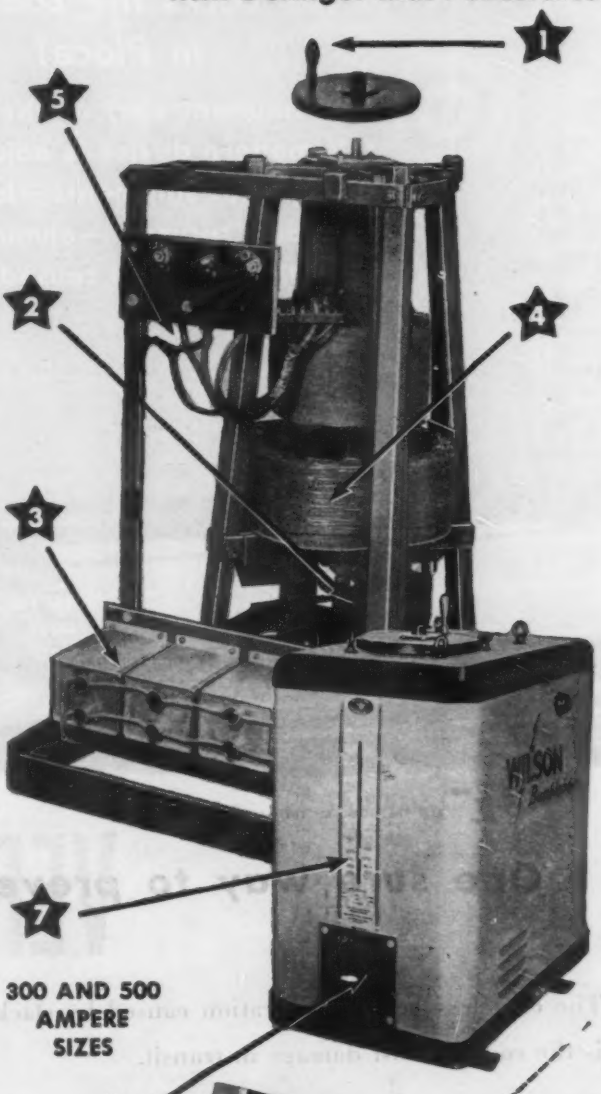
In addition, the "Bumblebee" offers all the advantages of AC welding:

- —Low Maintenance because of absence of moving parts
- —Low Power Costs because of high electrical efficiency
- —Faster Welding due to absence of arc blow and use of larger electrodes
- —Improved Quality of Welds

—at no greater first cost than other types of welding equipment.

Other AC welders in 100, 200, 750, 1000 ampere sizes.

Mail the coupon today for new catalog—or write to your nearest Airco office.



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Air Reduction
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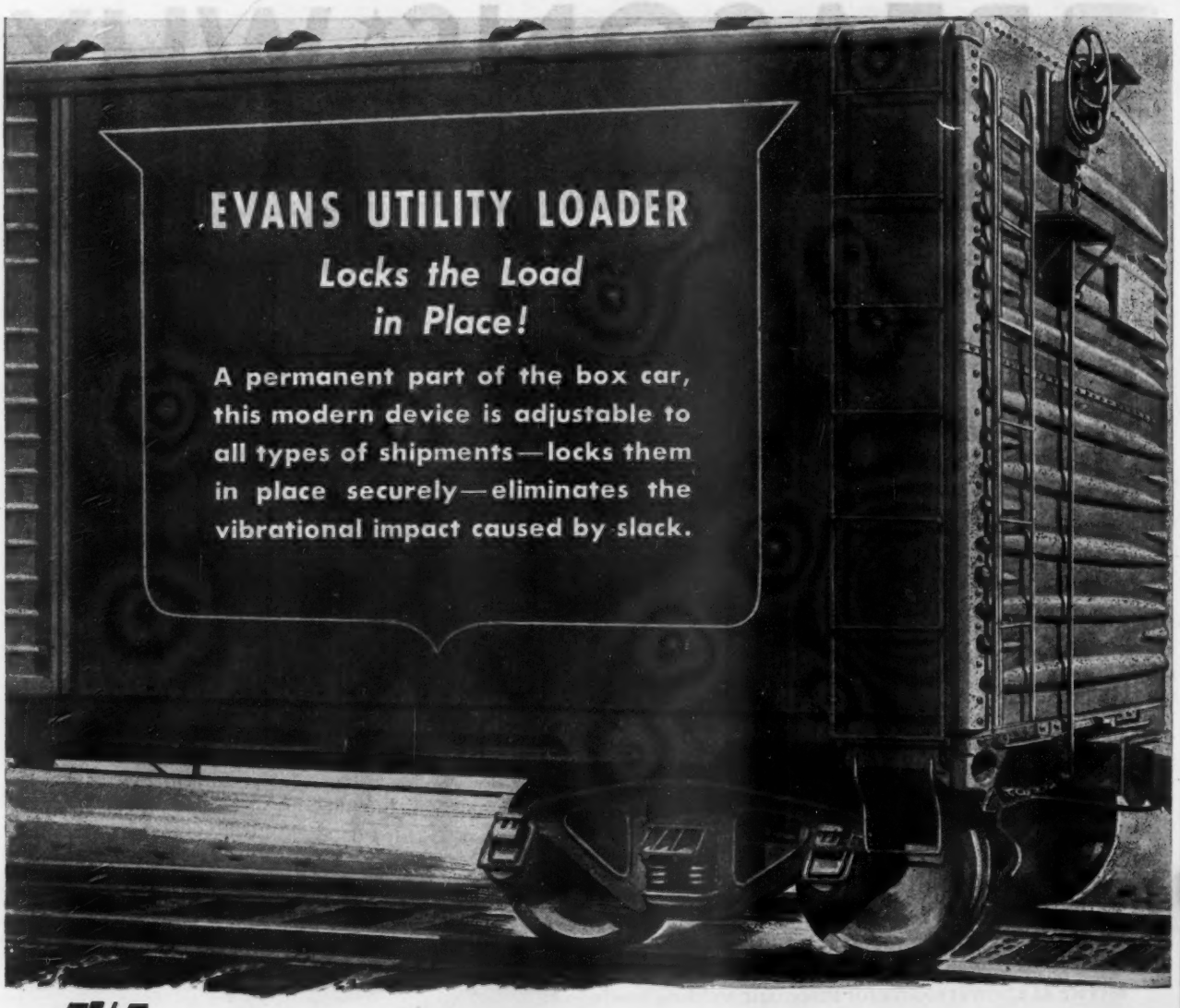

EVANS UTILITY LOADER
Locks the Load in Place!
A permanent part of the box car, this modern device is adjustable to all types of shipments—locks them in place securely—eliminates the vibrational impact caused by slack.

FOR THE GOOD OF THE RAILROADS

One sure way to Prevent VERTICAL VIBRATION

The ceaseless Vertical Vibration caused by slack is the root of most damage in transit.

This costly, needless source of damage is eliminated by Evans Utility Loader. For it locks the load in place—securely and safely.

The Evans Utility Loader scientifically protects shipments of all sizes and shapes against the vicious impacts (millions of them) that shake freight loose from ordinary bracing.

The Evans Utility Loader prevents the delays and annoyances of damage claims—and helps railroads to obtain increased payloads and the general box car efficiency made possible by this modern device.

We Must Eliminate Waste in Shipping — L. Evans PRESIDENT

EVANS PRODUCTS COMPANY

DETROIT 27, MICH.

HERE'S AN IMPROVED 4-WHEEL ENGINE TRUCK

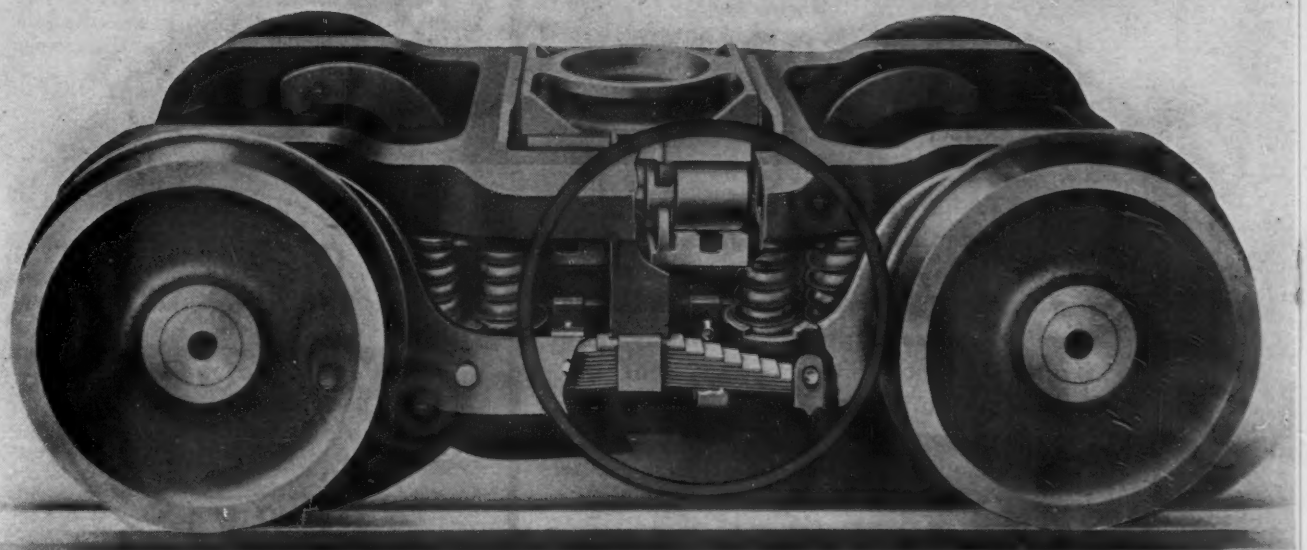
WITH COIL AND SEMI-ELLIPTIC SPRINGS

This Commonwealth Engine Truck—*tested in service*—gives you all these advantages:

- Increased spring travel softens the blows delivered to locomotive and roadbed.
- Spring capacity is increased.
- Spring breakage is reduced.

Furnished with improved roller type or rocker type centering device.

Lower your maintenance costs and increase locomotive availability with this newest type Engine Truck.

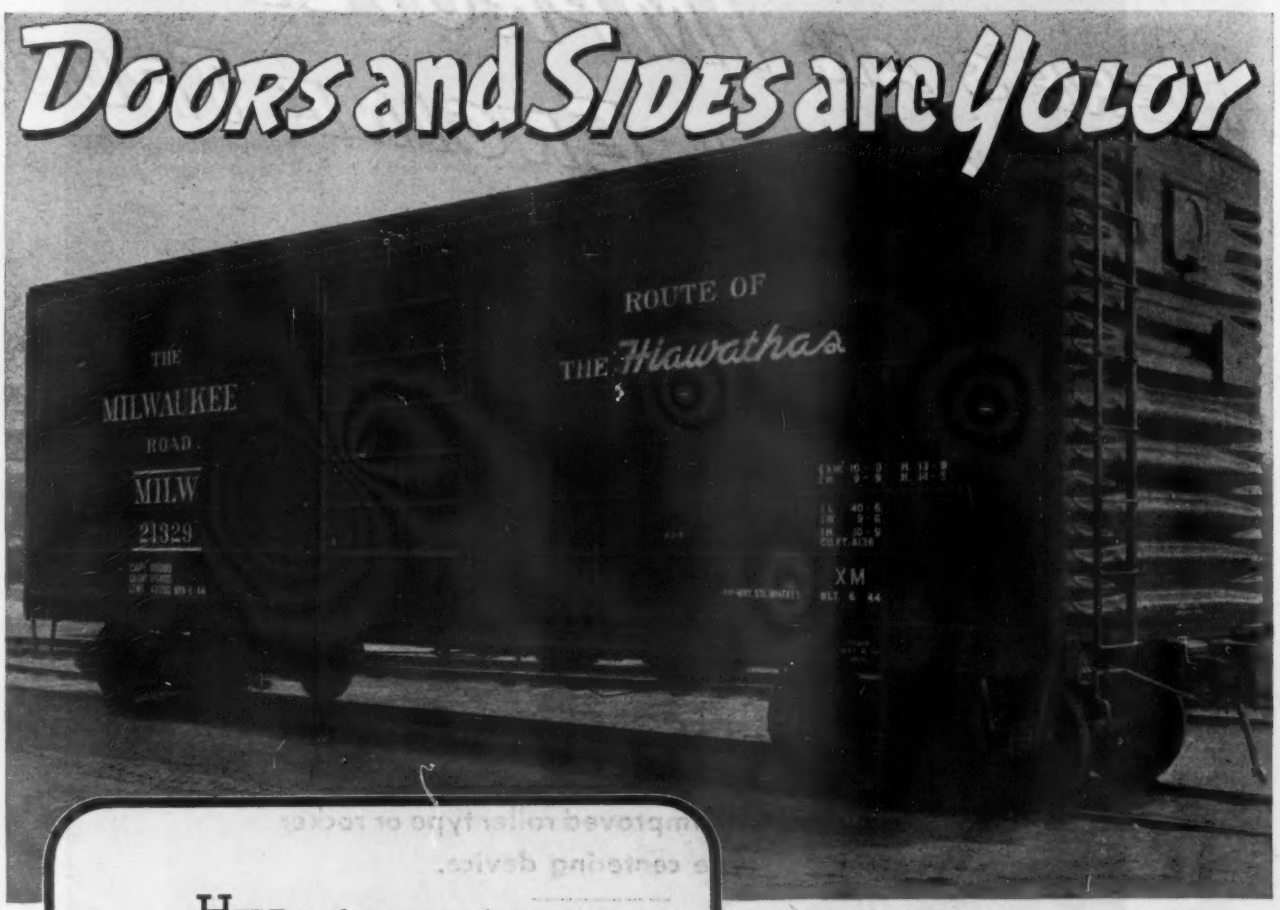


Equalizers and Truck Frame cut away to show Coil and Semi-Elliptic Spring Arrangement and Roller Type Centering Device.

GENERAL STEEL CASTINGS

EDDYSTONE, PA. · GRANITE CITY, ILL.

DOORS and SIDES are YOLOY



HERE is the newest box car now in service on the Chicago, Milwaukee, St. Paul and Pacific. It is built with doors and sides of tough Yoloy steel, to reduce dead weight and still provide maximum strength.

Yoloy is not an untried new steel. It is, in fact, in service now in thousands of cars, standing up splendidly in severe service in all parts of the country. In the past ten years Yoloy has demonstrated its advantages to thousands of experienced railway men.

Yoloy steels are high-strength nickel-copper alloys that combine high resistance to shock and abrasion with desirable non-corrosive qualities. Yoloy is easily formed or welded, so as to permit the many improvements and refinements sought in modern car building. The result is that Yoloy is now one of the accepted structural materials used by American railroads.

If you don't know Yoloy, it's time to get acquainted. For a proper introduction to Yoloy and its scores of uses by leading railroads, call our nearest sales office--or write direct to The Youngstown Sheet and Tube Company, Youngstown, Ohio.

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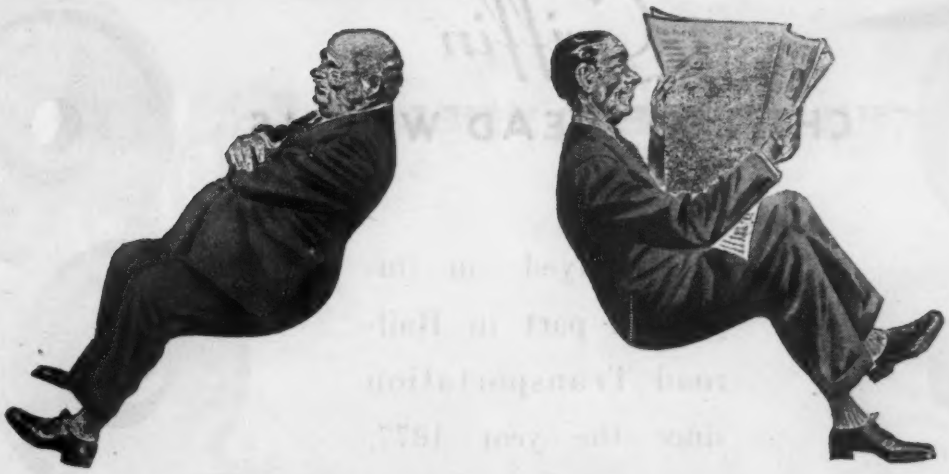

NOTHING TO SIT ON...

After the war you'll be wooing passengers again instead of shooing them.

We know you plan to lure them with comfort. We know you know foamed latex is the most restful, most durable cushioning for train seats. That's proved by the number of times we've had to say, "Sorry, all *Foamex* today is for war uses."

But how about your waiting rooms? Will those be competitive for comfort?

Plan now to make them so. *Foamex* will make station seats more comfortable, just as it has revolutionized comfort in bus, train, and plane seats.

Foamex is more restful because it cradles people on millions of perfectly resilient, air-breathing cells.

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P.S. The ideal covering for *Foamex* seats — *Velon,** Firestone's new wonder fabric. Makes smarter colors practical.

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have played an important part in Railroad Transportation since the year 1877.

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Liberate A.A.R. COIL SPRINGS

from the dangers of overload shocks

Uncle Sam Uses Volute Springs on Many Tanks.

Signal Corps Photo

Style A-6-A HOLLAND Volute SNUBBER SPRINGS

Absorb excess shocks otherwise transmitted to the car, lading and track.

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HOLLAND COMPANY

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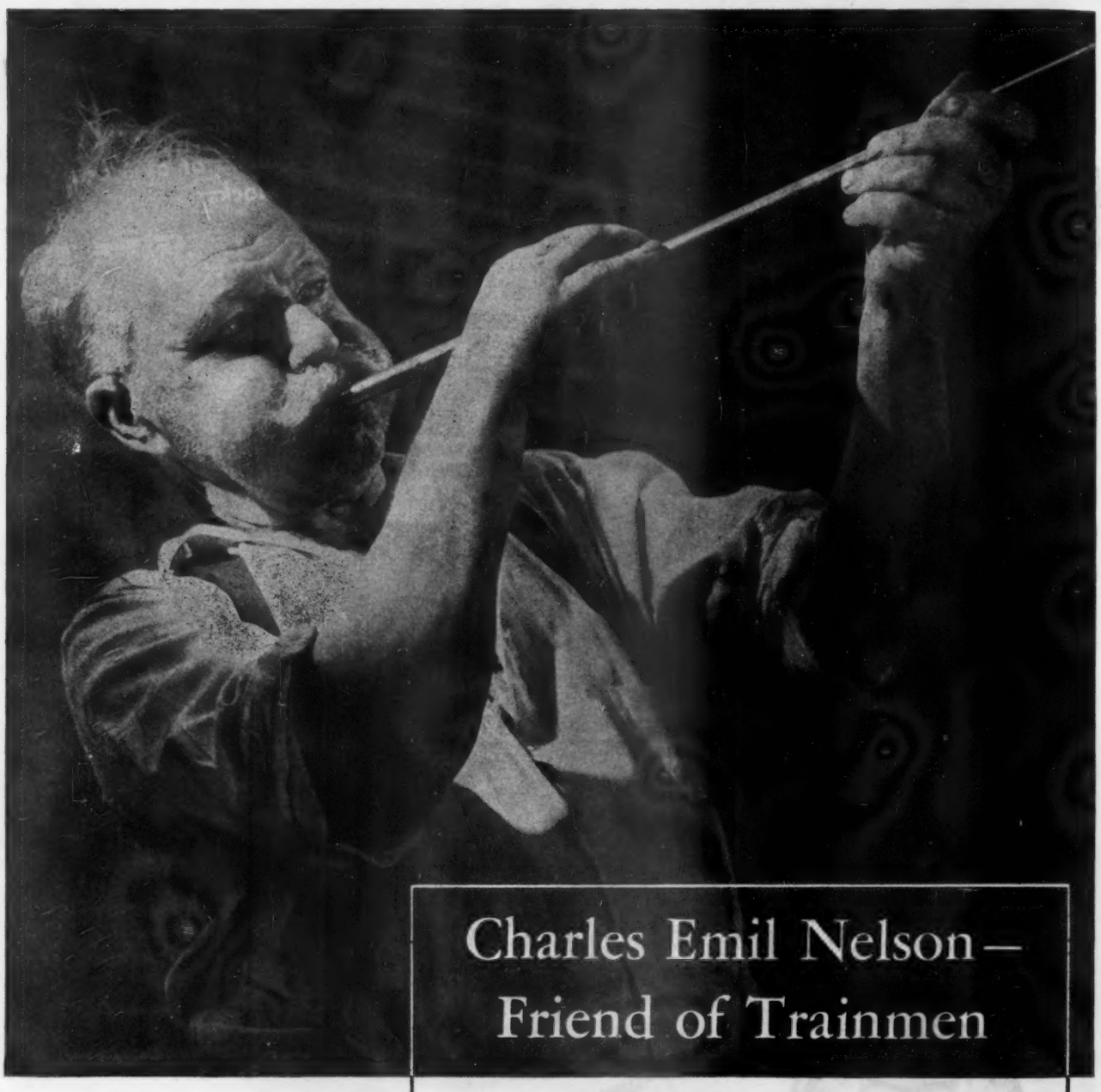


Charles Emil Nelson—Friend of Trainmen

Charlie Nelson never knew many trainmen, but he was a friend of thousands. During his fifty years of service at Corning, he became a skilled craftsman; his specialty: blowing the "glass bubbles" for railroad signal lanterns.

The formula for this special glass that will not break in snow or sleet was developed by Corning scientists, but the skill in blowing the globe itself was Charlie Nelson's.

Corning is justly proud of its physicists and chemists whose work results in new formulae and new applications for glass. There is just as great reason to be proud of the many Corning craftsmen who, as did Charlie Nelson, possess the skill and knowledge of the working qualities of glass which enable them to make superior products. All manufacturers of lamps, lanterns and signals can supply Corning Railroad Glassware.

Safety depends on Signal Glassware—America's railroads depend on Corning.

"CORNING" is a registered trade-mark and indicates manufacture by Corning Glass Works, Corning, N.Y.

CORNING
means
Research in Glass

FULL SPEED AHEAD!

--OVER DRY, SAFE ROADBEDS

Time is important to railroads. Servants of a vast population, trains must run night and day, year after year, in all kinds of weather.

FIRM, DRY ROADBEDS

To keep the roadbed firm and dry, ready for traffic at all times, there must be adequate subdrains. ARMCO Perforated Pipe gives full assurance of efficient drainage. Water pockets are eliminated before they start. If your present roadbed shows damage from groundwater, proper use of perforated metal pipe is a prompt cure.

UPKEEP COSTS LOW

Maintenance costs go down when you use ARMCO Perforated Pipe subdrainage. Roadbeds *stay* firm and dry —and safe. There is no worry about the pipe crushing or disjointing under heavy loads, shifting soils, or traffic vibration. Flexible, corrugated metal design takes care of that.

It is easy to install ARMCO Perforated Pipe. Your regular crews can do the work quickly in any season.

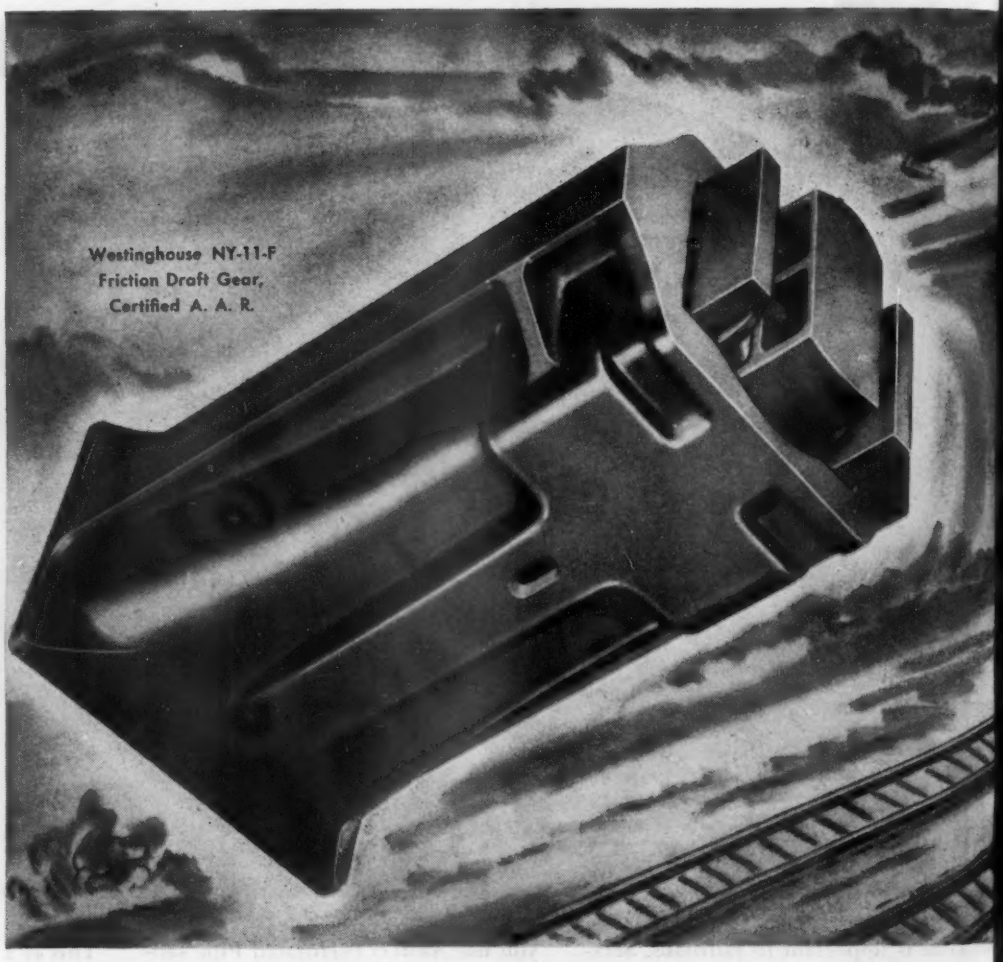
This is a good time to plan postwar drainage systems. High speeds and on-time schedules are to be expected, and roadbeds will have to be in condition to "take it." Get the complete facts on ARMCO Perforated Pipe subdrainage by writing Armco Railroad Sales Co. Incorporated, 3351 Curtis Street, Middletown, Ohio.

EXPORT: THE ARMCO INTERNATIONAL CORPORATION

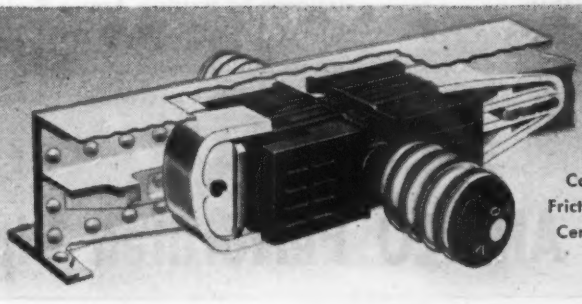
ARMCO

ARMCO Perforated Pipe

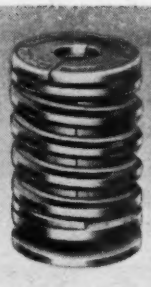
Protect your rolling stock investment



Westinghouse NY-11-F
Friction Draft Gear,
Certified A. A. R.

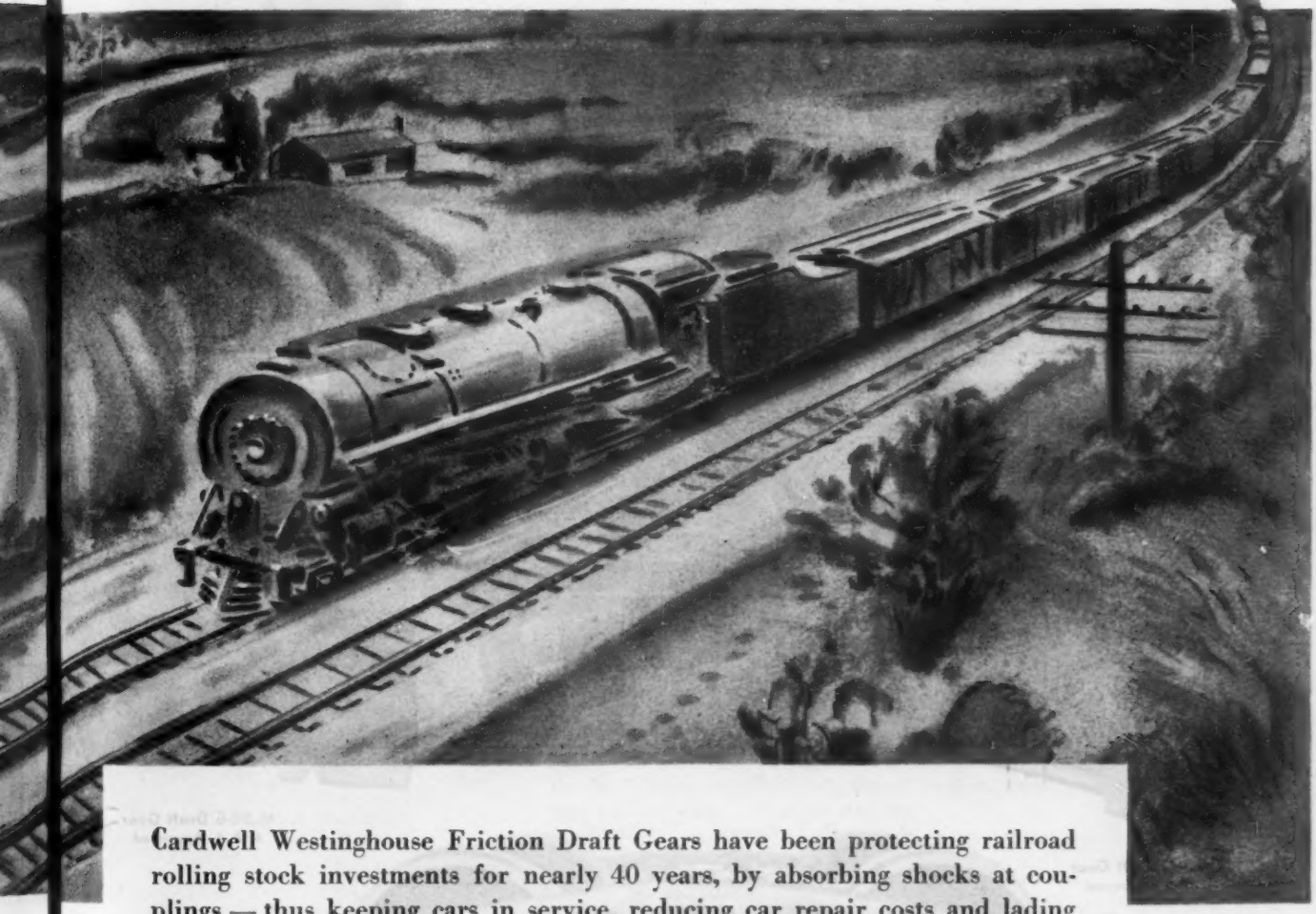


Cardwell M-25
Friction Draft Gear
Certified A. A. R.



Cardwell Friction
Bolster Spring
Type A

Friction draft gears facilitate the starting of long trains.

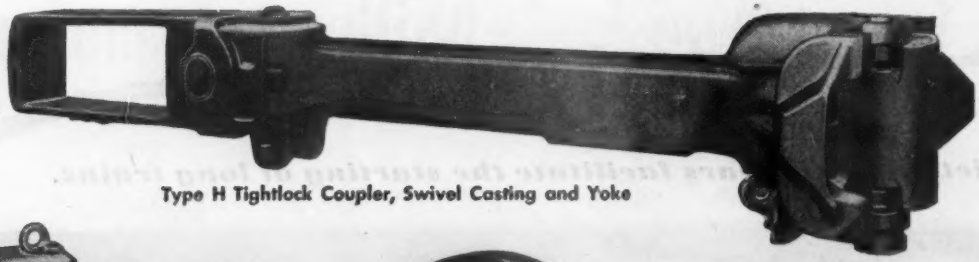


Cardwell Westinghouse Friction Draft Gears have been protecting railroad rolling stock investments for nearly 40 years, by absorbing shocks at couplings — thus keeping cars in service, reducing car repair costs and lading damage claims.

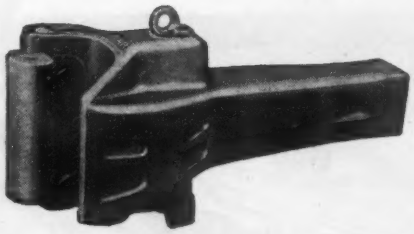
Over 98% of the cars in freight carrying service are A. A. R. construction, and over 96% have Friction Draft Gears.

Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

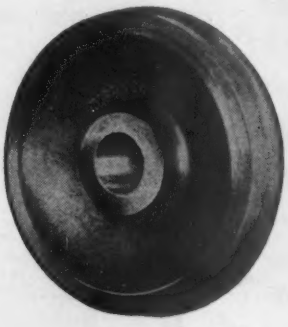
NATIONAL PRODUCTS
FOR RAILROAD EQUIPMENT



Type H Tightlock Coupler, Swivel Casting and Yoke



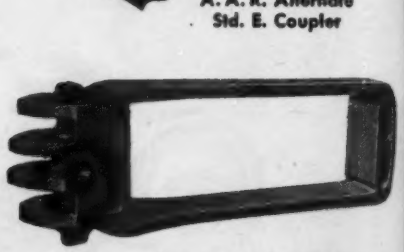
A. A. R. Std. E. Coupler



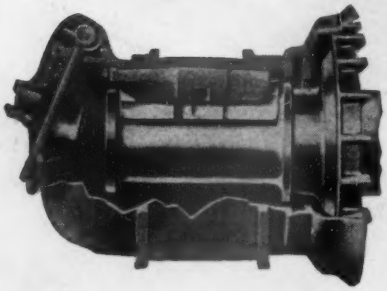
Naco Spun Steel Car Wheel

A. A. R. Alternate Std. E. Coupler

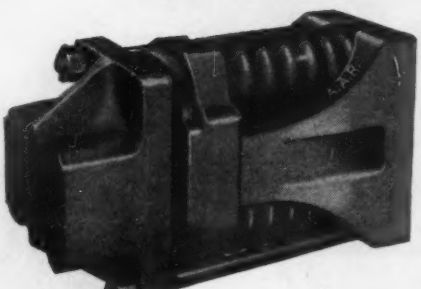
A. A. R. Std. Vertical Plane Horizontal Key Yoke



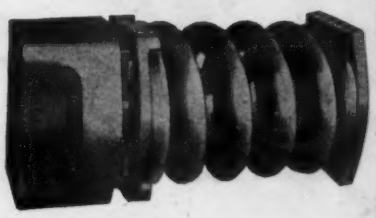
A. A. R. Alternate Std. Vertical Plane Swivel Yoke



National Journal Box with Deflecting Fan and Flexo No. 2 Lid



M-17-A Draft Gear A. A. R. Approved



M-50-B Draft Gear A. A. R. Approved

National B-1 Truck with Dual Control

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Railway Age

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Vol. 117 December 2, 1944 No. 23

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Fuel Value of Locomotive Coals ***843***

Allan O. Geertz, P. R. R. fuel engineer, herein discusses the British swelling index — a quick, simple and accurate method for the classification of coal.

Should Carriers "Feed" Airlines? ***845***

Believing that while such service might not be profitable per se, Dr. William L. Grossman in this article suggests that feeders would promote overall economy and public convenience, giving an impetus to co-ordination rather than uneconomic competition.

How the Army Has Learned to Railroad ***849***

The Military Railway Service has not always enjoyed its present reputation for high-grade railroading. Telling of its operations in two wars, General McIntyre points out how the cooperation of the carriers has aided M.R.S's. development into a smooth and efficient organization.

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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

PRINTED IN U. S. A.

are all provided in "Union" Switch Stands!

IN main line service, the "Union" Switch Stands accomplish many functions which ordinary switch stands, even in combination with additional apparatus, cannot provide.

The point throwing mechanism of the "Union" hand-operated Switch Stand locks the switch operating rod in the normal and reverse positions. Normally positioned points are securely locked by a lock bar and switch lock rod of the same sizes that have been standard on power-operated switches for many years. Furthermore, a built-in circuit controller for signal control provides a positive check that the lock rod is actually locked.

For additional safety for facing-point train movements, a point detector control is provided to check the normal position of the switch points. This point detector may be provided with a latch arrangement that functions to hold governing signals at "stop" should improper trailing of the switch occur. For further details, see Bulletin 156.

ARMY E NAVY

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

BEST JOB MAKER: If the nation relies on New Deal policies for post-war "full employment," it will do so in complete disregard of the entire economic history of the United States. Private enterprise's record as a job maker is so much better that the New Deal is not even a close second. This issue's leading editorial compares the records, setting forth figures which show that employment averaged 97.2 per cent of the labor force in the 30 years ending with 1929, whereas in the 1933-1939 period of the Roosevelt administration, with its huge government expenditures, the number of unemployed averaged 17.3 per cent of the labor force. It was only the defense program and the war which brought full employment. And whoever believes that private enterprise, without the fetters and government spending of the New Deal, cannot make the better post-war record should explain why employment in every year from 1900 to 1931 was greater than in any year of the 1933-1939 period.

●

M. R. S. CAME FIRST: The Military Railway Service in France recently found itself in need of additional operating officers, and it appealed to American railroads for help. How the carriers sacrificed trained manpower from their own organizations, sending out officers who began to arrive in Paris within a very few days after the appeal, is told in our news report on Major General Frank S. Ross' letter of appreciation to A. A. R. President J. J. Pelley. A significant and symbolic contribution is what General Ross called it.

●

PLANE LID OFF: Domestic airlines will be able to take on more business now that President Roosevelt has removed limitations on the number of planes they may operate, and the War Department has agreed to make available transport aircraft which have been declared in excess of war needs. The airlines now have 300 planes of greater total capacity than the 324 in service when the now-revoked restrictions became effective in May, 1942. Air Transport Association President Gorrell estimates that the actions of the President and War Department will enable the carriers to show gains, in 1944 as compared with 1943, of 22.5 per cent in revenue passenger-miles, 24.7 per cent in mail pound-miles, and 7.2 per cent in express pound-miles. Next year's gross revenues are expected to exceed $150 million as compared with this year's $123 million.

●

ARMY RAILROADING: The Military Railway Service, as such, came into being during the Civil War; and it has since come a long way from Army railroading of that period when trains could be held up while generals' wives did their shopping. The history and development of M. R. S. into "one of the finest of the Army's services" is highlighted by Brigadier General Andrew F. McIntyre in one of this issues' feature articles. The general stresses the big training jobs which have had to be done in war periods because the service has been inactive during peacetime. He gives full credit to the railroads for their role in this training, pointing out that most of today's soldier railroaders were trained on various roads under everyday working conditions.

●

COAL SWELLING INDEX: The Pennsylvania has found that British Swelling Index, as a measure of free swelling of various coals, provides a quick and accurate method for their classification. How the results of its use have been borne out by longer testing procedures and actual service results is told in one of this issue's feature articles by P. R. R. Fuel Engineer Allan O. Geertz.

●

CITATIONS: American railroad men continue to win military honors on the fighting fronts. News stories in this issue report a Bronze Star Medal award to a former Southern master mechanic, Lt. Col. Miles G. Stevens, now commanding officer of a shop battalion in the European theater; the citation of a former B. & O. engineer, Capt. Charles M. Bainbridge, now a shop battalion supply officer in France; and the promotion of Major Edgar H. Boykin, former L. & N. traffic man, to the rank of lieutenant colonel. Col. Boykin is also in France as chief of the freight branch, Office of the Chief of Transportation.

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LASHER SHIFTED: Colonel E. C. R. Lasher, who had been deputy chief of the Traffic Control Division, Army Transportation Corps, was recently transferred to New York as zone transportation officer. He will be missed at T. C. D. by the railroad men who worked with him on Army freight and troop movements.

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HELP FOR CHRISTMAS: Railroads in need of additional labor to handle mail, express and freight through the coming Christmas season may employ servicemen on the same basis as last year, Army and Navy authorizations having been issued for the period from December 1 to January 2. A year ago approximately 60,000 men were thus made available to the carriers.

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HOW HALT SOCIALISM?: Like all informed observers of transportation conditions, E. A. Jack, the Aluminum Company of America's general traffic manager, recognizes that the indispensable railroads will have to be financed by the government if they are denied a chance to thrive as private business. In his search for a policy which would avoid such a further encroachment of socialism in the transport field, Mr. Jack has concluded that "the best way" —elimination of all subsidies—would perhaps not be practicable under existing conditions. He would therefore promote "integrated" transportation by permitting the railroads "to use without prejudice, but with proper safeguards, the facilities provided for their competitors, which facilities the railroads' taxes have helped to construct." Mr. Jack's views are set forth in a feature article herein.

AT LONG LAST: The House-approved land-grant-rate repealer was finally acted upon by this week by the Senate interstate commerce committee which made its favorable report on an amended version November 28. The amendments place a value of $68,272,770 on granted lands still held by the carriers, and stipulate that repeal will be postponed until that amount has been saved to the government in deductions applicable after the enactment date. Repeal would thus be delayed a little longer than under the House version, perhaps about 100 days as compared with 90 days. Another amendment, which would not affect the railroads, undertakes to earmark the $68,272,770 as a "Veterans' Farms Fund." Senate action will have to come fast if the repealer is to escape death; for when Congress adjourns this time all measures left pending will die. And leaders are talking of adjournment dates as early as December 10.

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STEAM TURBINE LOCO: The Pennsylvania showed its new steam turbine locomotive to a party of press representatives at Philadelphia this week. The engine, a 6-8-6, was designed and built by Baldwin and Westinghouse in collaboration with the railroad. Its two turbines replace the customary cylinders, pistons, and driving rods, and it develops a maximum of 6,900 shaft horsepower. Other characteristics are reported in an illustrated story back in the news section.

●

DELAYED ACTION: The Senate this week confirmed the appointment of George Barnard to the I. C. C., acting just about six months after President Roosevelt sent the nomination up. Mr. Barnard and the interstate commerce committee finally got together for a meeting on Tuesday morning, and the committee's favorable report went to the Senate that afternoon. An Indiana Republican and a member of that state's Public Service Commission, Mr. Barnard takes the late Joseph B. Eastman's place on the I. C. C., for a term expiring December 31, 1950.

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JOIN 'EM?: Dr. William L. Grossman, assistant professor of transportation at New York University, thinks railroads and bus operators (the "surface carriers") may now have the choice of joining with trunk airlines in promoting smoothly-functioning coordinated services, or permitting local and feeder air lines to win the feeder field by default. His thoughts on the matter are set out in a feature article wherein he notes the Civil Aeronautics Board's policy of granting local-and-feeder-line certificates on only a temporary basis—final determination in each case to be made after the trial period. He suggests that if competing railroad or motor coach service were to become fast, convenient and cheap, there should remain no basis for issuing permanent certificates for the feeder air services, which would prove costly to the taxpayers as well as to competing surface carriers. And he proposes steps to that end for the "serious consideration" of the surface carriers.

More GROSS-TON-MILES per day

MORE ton-miles per unit — per day — per year and every dollar spent for fuel . . . That's the record of General Motors Diesel Freight Locomotives.

On the Rio Grande, GM Diesels delivered 45 per cent more gross-ton-miles per day — 53.6 per cent more locomotive miles per month — average availability 90 per cent. GM Diesels on the Great Northern hauled 33 per cent more tonnage with a 25 per cent saving in time. On the Boston & Maine, a GM Diesel hauled 28 per cent more tonnage in 36 per cent less time, saving 3 hours and 35 minutes in the short distance of 186 miles.

GENERAL MOTORS LOCOMOTIVES

★ ON TO FINAL VICTORY — BUY MORE WAR BONDS ★

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS CORPORATION LA GRANGE, ILLINOIS, U. S. A.

Who Provided Employment Before '33?

There is no subject on which there is greater need of popular education than that of employment—how much of it there was in the past, who provided it, how it was provided, and what can and should be done to provide enough of it in future.

There was great unemployment just before and when President Roosevelt came to power in 1933. Certain policies, including advances in wages and prices, reduction of hours of work, and huge government spending, which were adopted on the initiative of his administration, were intended and are claimed to have had the effect of remedying unemployment. Therefore, continuance and expansion of such policies are being advocated by New Deal politicians and labor leaders as essential to the prevention of great unemployment after the war.

Plenty of Jobs in Private Business

All those who take this position either disregard or are ignorant of the nation's economic history previous to 1933. There were no government policies, and especially no government spending, expressly to stimulate employment before 1933. Total expenditures of the federal, state and local governments increased only from $1,636 million in 1903 to $3,008 million in 1916, and after World War I were reduced from $21,107 million in the fiscal year 1919 to $8,002 million in the fiscal year 1922. Was there, in consequence, large unemployment for long periods before 1933? The answer is given by statistics in an accompanying table showing (1) total government expenditures in 1903 and in 1913-1942, inclusive, and (2) the labor force, (3) employment, and (4) unemployment in each of the forty-three years 1900-1942, inclusive ("Economic Almanac, 1943-1944," Conference Board, p. 115, 117-118, and 386).

As the available normal labor force is estimated by census methods, employment exceeded the labor force in four of the thirty years ending with 1929–1906, and the three years 1917, 1918 and 1919 owing to effects of World War I. In the decade 1900-1909, inclusive, unemployment averaged 1,107,000, or 3.3 per cent of the normal labor force. In the seven years 1910-1916, inclusive, preceding our participation in World War I, unemployment averaged 1,259,000, or 3.2 per cent of the labor force. Not only were government expenditures greatly reduced after fiscal 1919, but 1921 and 1922 were years of depression in which occurred the severest decline of prices in history and nation-wide strikes in the coal mines and in railroad shops. Yet in the decade 1920-1929, inclusive, unemployment averaged only 1,620,000, or 3.6 per cent of the labor force.

Federal Spending Plus Record Unemployment

The decade 1930-1939, inclusive, included three years under President Hoover and seven years under President Roosevelt. Total government expenditures increased from an annual average of $9,351 million in the decade ending with 1929 to an average of $14,434 million in the decade ending with 1939, and in the seven years under Roosevelt averaged $15,550 million. And yet unemployment in this decade averaged 8,468,000, or 16.5 per cent of the labor force, and in the seven years of it under Roosevelt averaged 9,030,000, or 17.3 per cent of the labor force.

Year	Total Government Expenditures (millions)	Labor Force (thousands)	Employment (thousands)	Unemployment (thousands)	Per Cent Employment of Labor Force
1900		29,025	27,378	−1,647	94.3
1901		29,959	28,238	−1,721	94.3
1902		30,905	30,405	−500	98.4
1903	$1,636	31,842	30,319	−1,523	95.2
1904		32,605	31,175	−1,430	95.6
1905		33,653	33,032	−621	98.2
1906		34,647	34,790	+143	100.4
1907		35,631	34,875	−756	97.9
1908		36,580	34,284	−2,296	93.7
1909		37,454	36,735	−719	98.1
10 Yr. Avg. 1900-1909		33,230	32,123	−1,107	96.7
1910		38,133	37,580	−553	98.5
1911		38,668	37,097	−1,571	95.9
1912		39,089	38,169	−920	97.6
1913	2,663	39,500	38,482	−1,018	97.4
1914	2,837	39,789	37,575	−2,214	94.4
1915	3,019	40,083	37,728	−2,355	94.1
1916	3,008	40,314	40,127	−187	99.5
1917	4,305	40,752	42,685	+1,933	104.7
1918	15,167	41,088	44,187	+3,099	107.5
1919	21,107	41,159	42,029	+870	102.1
10 Yr. Avg. 1910-1919		39,858	39,566	−292	99.2
1920	9,756	41,897	41,339	−558	98.7
1921	9,098	42,445	37,691	−4,754	88.8
1922	8,002	42,966	40,049	−2,917	93.2
1923	8,305	43,760	43,011	−749	98.3
1924	8,736	44,549	42,515	−2,034	95.4
1925	9,166	45,009	44,192	−817	98.2
1926	9,442	45,962	45,498	−464	99.0
1927	9,747	46,939	45,319	−1,620	96.5
1928	10,323	47,914	46,057	−1,857	96.1
1929	10,937	48,354	47,925	−429	99.1
10 Yr. Avg. 1920-1929	9,351	44,980	43,360	−1,620	96.4
1930	11,192	49,006	45,997	−3,009	93.9
1931	11,688	49,597	42,530	−7,067	85.8
1932	12,612	50,132	38,727	−11,405	77.3
1933	11,463	50,691	38,827	−11,864	76.6
1934	14,399	51,267	41,474	−9,793	80.9
1935	17,159	51,769	42,653	−9,116	82.4
1936	16,837	52,237	44,830	−7,407	85.8
1937	15,973	52,692	46,279	−6,413	87.8
1938	15,755	53,229	43,416	−9,813	81.6
1939	17,259	53,788	44,993	−8,795	83.6
10 Yr. Avg. 1930-1939	14,434	51,441	42,973	−8,468	83.5
1940	18,049	54,322	46,683	−7,639	85.9
1941	22,919	54,676	51,434	−3,242	94.1
1942	43,017	55,143	55,767	+624	101.1
3 Yr. Avg. 1940-1942	27,995	54,714	51,295	−3,419	93.8

Who provided employment averaging 97.2 per cent

of the labor force in the thirty years ending with 1929, and by what means was it provided? Obviously, virtually all of it was provided by private enterprise by the usual methods of private enterprise; for during those three decades private enterprise and employment were but slightly affected by government interference or spending. The depression beginning in 1930, like previous depressions, caused large unemployment. But the nation quickly recovered from previous depressions and unemployment. New Deal policies were in effect throughout the years 1933-1940, inclusive, and total government expenditures increased from $11,463 million in 1933 to $18,049 million in 1940.

The Way to Real Employment

Why, then, did the nation so completely fail to recover that in those years unemployment averaged 8,855,000? Let somebody who believes that private enterprise without the fetters and government spending of the New Deal cannot provide adequate employment in future explain why during the thirty-two consecutive years 1900-1931, inclusive, there was less unemployment in *every year* than there was under the New Deal in *every year* of the eight years 1933-1940, inclusive, excepting 1937.

The nation is squarely confronted with a vitally important question: Will it, in an effort to provide adequate employment after the present war, return to the policies under which, excepting for brief periods, adequate employment always was provided until the advent of the New Deal; or will it rely for "full employment" upon New Deal policies under which until the war there always was great unemployment? The indisputable record proves that if it chooses to rely on New Deal policies it will do so in complete disregard of the entire economic history of the United States.

Protecting Railway Property

When the complete story of the war-time activities of the railways can be told, a bright chapter should be devoted to the work of railway special agents. These men, who police the railways' properties and devote their activities largely to the prevention of crime, have made an outstanding record. Of course, much of what they are doing cannot be described in detail, as their close relationship with the military and other government protective and investigative agencies brings them under military secrecy. Still, the manner in which the "cinder dicks" of a few decades ago have advanced to alert, intelligent and competent police officers is truly remarkable, particularly when it is considered that they have kept pace with the science of criminology as closely as any other law enforcement body.

As a matter of fact, the record of convictions secured to arrests made by railway special agents closely approaches 100 per cent, a performance that no other body of police has anywhere nearly equaled. One important reason for this is that the railway special agent must always have practically incontrovertible proof before making an arrest, in view of the possibility of legal action against his railway for false arrest. Special agents must be diplomatic in other ways as well. In handling mischievous boys, who may do great damage without criminal intent, the record has been outstanding. A tactful approach to this problem has saved many a youth from what might otherwise have been a criminal career. The entire approach to the problem of protecting far-flung railway properties has been with emphasis on crime prevention rather than merely hunting down the culprits after crimes have been committed.

Apart from the work of preventing sabotage, the war has added tremendously to the special agents' responsibilities in other directions. Passenger stations and trains are far more crowded than ever before and this affords many more opportunities for crime. In addition, many of the present day passengers are unfamiliar with traveling, and, as one result, instances of lost baggage have multiplied at an amazing rate. Both in the prevention of crime brought about by crowded conditions in stations and on trains and in the recovery of lost baggage the special agents have done an excellent job. Another important factor in their increased activity has been the necessity for one or more of their representatives to ride the trains hauling Mexican Nationals to all parts of the country as additional track labor. Keeping these men from disappearing at various intermediate stations has really been a difficult job, but one that has been accomplished.

The necessity for the railways, in time of man-power shortage, to hire many new and inexperienced employees has also added to the special agents' problems. With so many new faces it would be difficult for a special agent to determine who was a trespasser and who a new employee unless he devoted special study to this problem, and in view of the valuable freight moving now, this is most important. Practically every new war-time activity of the railways has presented new problems to the special agents, and they are deserving of the utmost credit for the manner in which they are meeting a difficult situation.

War-Time Traffic on British Railways

The British railways, in contrast to those in this country, are under war-time government control, and the authorities have until recently been most secretive regarding the volume of their traffic. Now, however, some figures on war-time performance have been released and are published in the Railway Gazette (London) of October 27, permitting some interesting and instructive comparisons with the war-time job the United States railways have assumed.

From pre-war (12 months ended August, 1939) to the year 1943, the British railways experienced an in-

crease of 70 per cent in passenger-miles and of 46 per cent in ton-miles. During approximately the same period (i.e., comparing the calendar year 1939 with 1943) the railways in the United States increased their passenger-mileage 288 per cent and their ton-mileage 112 per cent.

The British railways had prior to the war, however, not suffered a shrinkage of traffic since the 'Twenties compared to that of lines in the United States—and there was available to them, consequently, less unused capacity. In 1939 railroad passenger-miles in this country were 27 per cent less than in 1929. We have only an estimate for passenger-miles in Britain in these two years, but the comparable decline over there appears to have been only about 15 per cent. Freight traffic (net ton-miles) declined 26 per cent in the United States from 1929 to 1939, and only 12 per cent in Britain. Another factor making for a smaller increase in passenger traffic in Britain than in the United States after the advent of the war was that Britons had fewer automobiles to abandon. In 1939 passenger-mileage on the British railways was only 14 per cent less than that of the United States railways—in a country with only about one-third our population. Even with all their war-time turning to the railways as a means of passenger transportation, the American people are still not using the railroads as intensively in proportion to population as the British are.

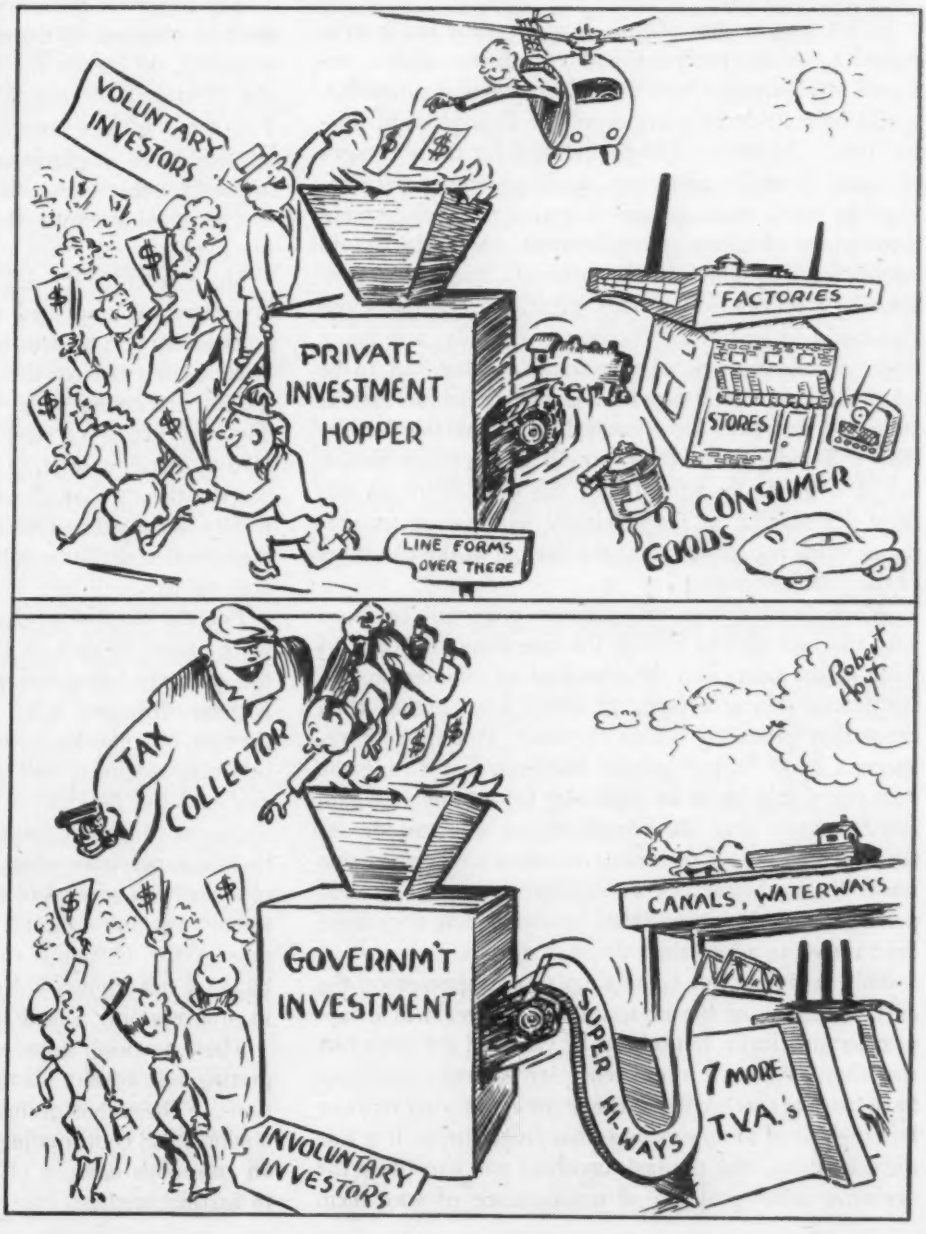
In contrast to its relatively much greater reliance on railways as a means of travel, Britain calls on its rail carriers for proportionately far less freight service than Americans require. In 1943, net ton-miles on Britain's railways were only 3½ per cent of the magnitude of the freight service performed by the American railroads.

The British railways have had, of course, to operate under the hindrance of heavy and continued enemy action—so severe that any increase at all in their total performance comes close to the miraculous. In their own territories, the railway men of the English-speaking world appear to have acted with parallel resourcefulness and skill to make their plants yield the utmost performance of which they were physically capable—and the variations in the results achieved are ascribable to differences in the physical factors, not the human ones.

M. of W. "Reconversion"

Unlike many other industries the railroads will not have a reconversion problem when the war ends in the sense that it will be necessary for them to change over to production of something entirely different from what they have been producing during the war years. But

Which Type of Investment for Post-War Employment?



they will be confronted with many problems incident to the coming of peace—problems that will be compounded partly of the need of divesting themselves of many uneconomic practices that have been forced on them by war conditions and partly of the necessity of adjusting themselves to the new conditions that will prevail in the post-war period. In this sense they will have a "reconversion" problem of the highest order, and in no other branch of railroad endeavor will this problem have more serious implications than in the maintenance of way and structures department.

From the outset of the war maintenance men were caught between the growing shortages of men, materials and equipment and the obligation to keep the tracks and structures in adequate condition to carry a traffic load that quickly reached record proportions. In this predicament economic considerations, always heretofore a primary concern, had to be relegated in many instances to a subordinate position; the imperative need was to maintain the tracks and structures almost without regard to cost.

Under the pressure of this situation many roads were forced to adopt practices and expedients which, designed solely to cope with the exigencies of the moment, would be considered extravagant or ill-advised in normal times. In attempts to compensate for the shortages of materials and man-power, work programs were revised in many cases in such a manner that they were thrown out of balance; employment standards had to be relaxed; equipment and materials had to be continued in service for periods greatly exceeding those that could be justified on economic grounds; and many material substitutions of questionable value had to be adopted. From their experiences with these various expedients, the roads have learned some valuable lessons that will redound to their benefit when peace comes, but it is generally agreed that the over-all result has been a reduction in the efficiency with which maintenance work is carried out and a decline in the condition of the fixed properties.

When peace comes maintenance men will be faced with the necessity of raising the operating efficiency of their departments and the standard of maintenance of the tracks and structures to levels even higher than those that prevailed before the war. But in both respects a good deal of ground has been lost during the war years that must be made up before any net gain can be shown over the immediate pre-war period. As the first step in this direction, maintenance departments must divest themselves as rapidly as conditions will permit of all the uneconomic practices that they have been forced to adopt since the war started.

This task may not be as simple as it appears on the surface. Some of the undesirable practices will disappear automatically, but others, by virtue of the mere fact that they have been in existence for several years, may have become entrenched to the point of offering more or less resistance to any move to eliminate them. But this must be done, and the task involved will constitute the "reconversion" problem of maintenance of way men.

Corrosion of Buried Metal

Test results made available recently by the National Bureau of Standards give evidence of what may be accomplished with alloys and coatings to prevent corrosion of pipe lines in various types of soils. The tests have been limited in scope, but they indicate that small percentages of alloys have no marked effect, while steels high in nickel and chromium, and copper alloys high in copper, are very resistant to nearly all soil conditions.

A 3-ounce coating of zinc added about 3 years to the life of steel exposed to some of the most corrosive soils; and, although lead corrodes only slightly after it acquires a coating of an insoluble salt, lead coatings on steel pipe appear to be inadequate for severe soil conditions. Air-dried Bakelite coatings blistered within four years and a baked-on Bakelite coating blistered in a few places, allowing pitting under some of the blisters.

The results of the Bureau tests are somewhat similar to those obtained by the more elaborate tests, now about complete, on metals for overhead conductors made by the Electrical Section, Mechanical Division, A. A. R. For these tests a considerable variety of metals was suspended in enginehouse jacks, in tunnels, and in locations subject to salt air. Samples were cleaned and weighed after varying periods of exposure extending over several years.

More recently the Electrical Section has started an investigation concerned with the corrosion of steel in buried concrete structures. This involves the flow of electric current from the steel through the concrete into the soil and comes under the general title of electrolysis. The destruction of steel is, of course, greatly accelerated by the flow of stray currents from outside sources, but the theory that all corrosion is electrolytic is quite widely accepted. The results of this study should, therefore, contribute valuable information to the general subject.

For the purpose of the tests, similar steel specimens were placed in various thicknesses of buried concrete, the concrete being made in various mixes, with and without different kinds of admixtures calculated to prevent or retard corrosion. The same d.c. voltage, between specimen and ground, was applied in each case and the flow of current measured. Variations of thickness, different mixtures, and various admixtures had no appreciable effect on current flow, but a coating of asphalt on several of the concrete coverings reduced the current flow from 60 to 90 per cent. The effectiveness of the asphalt is thus indicated, though its durability is not known since the present tests have been in progress only a little more than a year.

There is need, apparently, for collecting and interpreting test results obtained under a variety of conditions. The value of information already available is obvious, and coordinating it would be effective in saving an enormous amount of metal and in giving direction to further studies.

Fuel Value of Locomotive Coals

British swelling index provides quick, accurate method for classifying coals—Results of its use borne out by longer testing procedures and actual service results

By Allan O. Geertz

Fuel Engineer, Pennsylvania

CORRECTLY defined, crop coal is weathered, oxidized, soft structure coal. It is usually stained throughout. A lump can be crushed in one hand, and has innumerable tiny fissures throughout the structure due to weather action. Now because this kind of coal is often found in the first or opening cut of a strip operation, many people have gotten to calling first cut coal "crop", and what is worse will insist that second or third cut coal is not "crop", regardless of quality, merely because it is not first cut. This has been the cause of many arguments between coal inspectors and strip operators, and is really a misunderstanding of terms. It has been found under 40 to 50 ft. of cover, and in fourth or fifth cuts.

The usual proximate chemical analysis in some cases does not indicate any wide deviation from normal coal in the same field, and it becomes a question as to how to determine crop coal simply and quickly.

Normal bituminous coals swell to a greater or lesser degree as they are burned at atmospheric pressure. Back in 1939, while studying another problem entirely, my attention was called to the British Swelling Index as a measure of free swelling of various coals. This test is simple, standardized, and quick, and it was made an addition to our regular coal analysis in the laboratory. It was not long before the relationship between this index and the quality of the coal became very evident. In the first four cases of steam failure which were clearly traceable to poor coal, as shown by several successive trains failing out of one terminal, the analysis of coal removed from the tenders showed a swelling index of 0 or 1. Since we had learned that coal from that particular field should have a swelling of 7, this low swelling on the coal that caused failure appeared to be more than a coincidence. It should be added here that a coal which does not agglomerate at all, that is, will show no signs of caking, is arbitrarily listed as zero swelling index, although the British Scale does not show any figure below 1.

Accordingly samples were taken at various pits from which we had received coal which gave us trouble. In each case we found that the good hard structure coal had a higher swelling index than more friable coal nearer the crop line in the same pit. From this point it was a short step to finding out what the swelling index should be for the various districts in which we buy coal. Here we ran into another curious fact; that is, that the normal swelling index of good coal gets steadily lower, as the fields progress westward. In the Pennsylvania low volatile field, a B.s.i. of 9 is not uncommon, in the Clearfield District 8 in the Pittsburgh District 7, in the West Virginia Panhandle 6, in Ohio 4 and 5, and in Indiana and Illinois 2½ to 5. I am not qualified to speak about coals west of the Mississippi, but would like to suggest that the normal British swelling indices for western coals should be studied by those of you who use those coals. Indications are that they may follow a different pattern of behavior.

The chemistry of crop coal is not thoroughly understood as yet. Oxidation is undoubtedly a very complex process. Coal is very active in taking up oxygen, but it is still an open question whether the oxygen is absorbed or chemically combined. The most active portions in coal chemically are the lignins, related to the cellulose structure of wood, and the bitumins. The bitumins possess plastic properties, and determine the final coke structure or swelling when heated between 300 to 400 deg. C.

Nature of Crop Coals

What's wrong with crop coal? Why can't railroads use it? Although there is still from 11,000 to 14,000 B.t.u. in each pound, the trouble is to get the coal to burn. Compared with good coal from the same seam, it is higher in moisture, lower in sulfur, lower in fixed carbon, and lower in sesquioxide of iron in the ash. The fusion temperature, because of lower iron in ash and sulfur, is likely to be higher. When placed in a firebox, it is much more difficult to ignite than normal coal from the same territory, resulting in reports that it puts the fire out. Furthermore, being very friable, it breaks up due to handling, forming a thick solid firebed through which it is difficult to draw air. When there is sufficient draft to pull air through the fire, the coal burns like popcorn, with small sparks shooting out. It does not cake or swell readily

Table I—Analyses of Six Samples from a Strip Pit

Sample No.	5	2	1	6	3	4
Location	Center of first cut	20 ft. back of shovel highwall, first cut	100 ft. back of shovel—outcrop of first cut	Highwall, second cut	40 ft. back of shovel center of second cut	10 ft. back of shovel highwall, second cut
Swelling index	0	1	1½	2	8	9
Moisture	6.91	2.70	1.56	1.30	.80	.14
Volatile	25.93	25.13	25.34	25.24	24.02	24.19
Fixed carbon	59.04	63.41	64.72	67.11	66.23	67.50
Ash	8.12	8.76	8.38	6.35	8.95	8.17
Sulfur	.56	.39	.36	.63	1.67	2.20
B.t.u.	11862	12979	13367	13918	13995	14415
Fe_2O_3 in ash	14.19	22.11	20.79	13.42	26.18	32.73
Softening point	2490	2220	2220	2630	2470	2380
Fusion temperature	2720	2390	2460	2800	2610	2510
Difference between softening point and fusion temp.	230°	170°	240°	170°	140°	130°
Grindability	121	...	...	108	105	105

Interpretation:
(1) Arranged in order of increasing swelling index.
(2) Moisture is consistently less.
(3) Volatile: practically no change.
(4) Fixed carbon: increases consistently.
(5) Ash: practically same.
(6) Sulfur: varies but higher in good coal.
(7) B.t.u.: consistently higher.
(8) Fe_2O_3: varies, but higher in good coal.
(9) Softening and fusion point: not predictable.
(10) Difference in temp. between softening point and fusion temp.: gradually goes down; less clinkering.

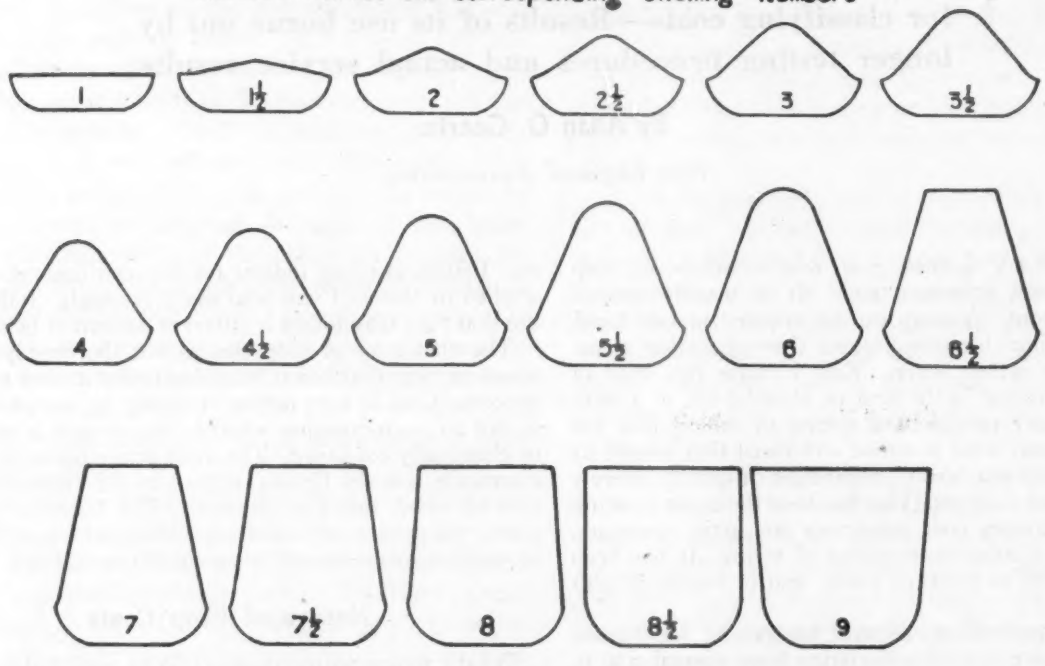
Note—This article is an abstract of a paper prepared for the 1944 proceedings of the Railway Fuel & Traveling Engineers' Association.

EXTRACT FROM B.S. 804

British Standards Institution.

CRUCIBLE SWELLING TEST FOR COAL

Standard Profiles and Corresponding Swelling Numbers



British Standards Crucible Swelling Test for Coal—Standard Profile and Corresponding Swelling Numbers

and in extreme cases will pour through finger type grates like red hot sugar.

In order to get a picture of how coal varies in the same strip pit, six samples were taken at different locations in one pit in Central Pennsylvania. No sample was more than 500 ft. from the furthest: that is to say, all the changes in the analyses occurred within 500 ft. Table I will give an idea of how the coal varies.

Now observe the relationship of the new characteristic—the swelling index. Note in Table I that it increases consistently with the quality of the coal, whether judged on the basis of heat value, fixed carbon, or moisture. That is, coal from a given field, whose characteristics are known, can be judged by the swelling index, which is quickly obtained as well as by the better known indices, which require considerable time to complete.

Referring again to the fact that the normal swelling indices vary from district to district, Table II lists the swelling indices normal to each of the fields which we have so far studied. It is very important, in using this index to judge coals, that this point be never lost sight of, that good coal from each field has a characteristic swelling index, and that the comparative values of coal must be judged by deviation from the normal figure for that field, and not by the absolute figure.

The standard method for making this test can be found in British Standard Institution Bulletin No. 804, issued July, 1938, at a price of two shillings. The equipment required consists of a crucible of fused silica with lid, a triangle to hold the crucible, a tripod to support the triangle over the burner and a Bunsen burner capable of maintaining a temperature of 820 deg. C. or 1,508 deg. F. One gram of coal, air-dried and passing 60 mesh, is levelled by tapping in the crucible. Place the lid on, and set in the triangle, supported by the tripod. Place burner underneath and heat for 2½ min. Remove the coke from the crucible and compare with the profiles shown in the illustration. Each profile has a number from 1 to 9 in half-number steps and the corresponding number or swelling index is assigned to the coke button by visual observation. This observation is made by looking straight down through a clear glass tube 10 in. long and 1½ in. in diameter, the bottom of which is 3 in. from the sample and profile.

This test will screen out all crop coal very quickly. Taken with an ash determination, no other test is necessary to say whether the coal can be used as locomotive fuel or not. If the swelling index and ash are normal, the volatile, moisture, heat value, and fusion temperatures will be about normal.

I am often asked if this test can be made in the field; that is, put some crushed up coal in a frying pan and see if it swells when heated. This can be and is being done in at least one case, but the method is not scientific, as conditions for the test cannot be accurately reproduced, as to weight, temperature, etc. The whole point of the swelling index is to have a simple, accurate test which can be reproduced at any time.

Table II—British Swelling Indices to Be Expected from Eastern Coals Bought for Locomotive Fuel

Swelling index	General outline of territory
8 -9	Cresson, Clearfield, South Fork, Nantyglo.
7½-9	Conemaugh Division, Bolivar west to Aspinwall.
7½-8½	Greensburg, Connellsville, Fairchance, Latrobe, Jeannette.
7 -8	Kittanning, Sligo, Dubois, Driftwood.
6½-7½	Panhandle Territory in Penna. & West Va.
6 -8	W. Virginia (N. & W. and C. & O.).
6 -7	Steubenville, Wierton, St. Clairsville, Ohio.
5 -7½	Eastern Kentucky.
4½-5	Salineville, Ohio.
4 -6½	Cadiz, Ohio.
3½-5	Western Kentucky.
3½-5	Zanesville, Cambridge, Caldwell, Ohio.
3½-5½	Illinois.
2½-5	Indiana.

Should Carriers "Feed" Airlines?

Such "feeder" service might not be profitable per se but would promote overall economy and public convenience —— Would give impetus to coordination rather than uneconomic competition

By Dr. William L. Grossman

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THE Civil Aeronautics Board has determined, as a matter of policy, that it will grant certificates for local and feeder air services on only a temporary basis. At the expiration of the trial period—which, the board has indicated, is likely to be about three years—the board will determine in each case whether to grant permanent status for the service.

Feeder Air Services on Trial

Under the provisions of the Civil Aeronautics Act, the board cannot authorize an air service unless it finds that the air transportation in question "is required by the public convenience and necessity." The existence of public necessity, in turn, depends in part upon the non-existence of adequate surface-carrier alternative services. In other words, if competing railroad or motor carrier service is—or, by the end of the trial period, becomes—sufficiently fast, convenient, and cheap, it may make continuation of the new air service unnecessary. As local and feeder air services will prove costly to taxpayers (through airport construction, airmail compensation, and other aids) as well as to competing surface carriers, steps that may make such services unnecessary and therefore establish their non-compliance with legal requirements merit serious consideration.

To the extent that the new air services will feed traffic to existing trunk airlines, i.e., to the extent that they are *feeder* rather than *local* services, they will have, at least at the start, a striking advantage over most intercity surface services with which they might compete. That advantage is direct connection with the airport from which the trunk airline operates. Another supposed advantage is greater speed. Yet it is possible that, by improved coordination between surface carriers and existing airlines, the net advantage of feeder air service to the passenger will in some cases be greatly reduced, if not altogether eliminated, before the end of the trial period. Let us review briefly some of the methods by which such coordination may be effected, bearing in mind always that the appropriate application of each method depends upon local conditions. Because airlines are still primarily passenger carriers, we shall consider chiefly passenger service coordination. The adequacy of present arrangements for air-express service coordination between Railway Express Agency and the airlines, and the possibilities with regard to motor carriers in air-freight feeder service, would require separate and extensive treatment.

1. *Reservations.* Some journeys are begun by rail and continued by air, and more such journeys would doubtless be made if the two services were better coordinated. It would be convenient, for example, if the passenger could make both of the reservations and could purchase both tickets at the railroad station at point of origin. At present he generally cannot do so. (If his journey begins by air and continues by rail, the airline will, if he wishes, arrange for both reservations, but will not sell the railroad ticket.) In England, a passenger may (at least in peace-time) reserve his seat and purchase his ticket at a railroad station for a Railway Air Services flight. Although that British practice results in part from the affiliation between Railway Air Services and the large British railways, it is not altogether irrelevant to the problem of desirable American practice, for it at least suggests that an aggregate net advantage to the carriers as a group can be gained through the sale of airline tickets by railroads.

2. *Schedules.* Should a surface carrier that carries passengers to and from a point served by an airline, adjust its schedules to provide convenient connections with the airline schedules? Where the surface carrier provides frequent service, such adjustment would generally be unnecessary. Where the surface carrier provides relatively infrequent service, the answer depends upon the relation between the number of regular passengers that it will lose by the adjustment and the number of surface-air passengers that it will gain thereby. One can hardly expect a railroad to change its only local train over a certain route from an 8-9 a. m. schedule to a 5-6 a. m. schedule in order to enable two or three passengers to make nice connections with a 6:30 a. m. flight. But if the flight departs at, say, 9 a. m., and future changes in air-transport rates and equipment attract a substantial number of passengers daily who will take the train if its schedule permits transfer without delay or danger of missing the plane, the railroad may be justified in making the small necessary change in schedule.

A Place for the Bus

Such circumstances would perhaps be relatively rare in the case of railroads. But the small capacity of a bus might make it desirable in many cases for an intercity bus line to add a schedule daily in order to take care of a relatively small number of persons wishing to make a convenient connection with a flight. Even if the revenues derived from the additional schedule barely balance the necessary out-of-pocket cost, the service to bus-air passengers might go far to indicate the non-necessity of feeder air service over the same route and might thus help to rid the motor carrier of a subsidized competitor.

3. *Airport Connections.* In a study (Hubbard, McClintock, and Williams, "Airports") written fourteen years ago and still highly regarded, the authors point out that location of an airport "directly on an important railroad line . . . facilitates the transfer of passengers and freight from plane to train and vice versa. Further, it is then easy to provide spur tracks for the shipment of oil, gasoline, and various other materials in large quantities to the airport. Indeed it might be said that no large airport could

afford to be without at least a spur-line railroad connection; and where an airport is not located on an existing railroad line, the possibility of the construction of such a spur line should be carefully considered. If the airport were built directly over a railroad terminal or railroad yards, this connection between air and railway would be ideally provided."

Joint Rail-Air Service Not New

This brings to mind the joint rail-air service established in 1929 by the Pennsylvania Railroad, the Santa Fe, and Transcontinental Air Transport (a predecessor of T. W. A.). The Pennsylvania established a railroad station adjacent to the airport near Columbus, Ohio, so that a passenger, having arrived from New York by train, could walk from train to airplane. His other two transfers were by buses which carried him between airports and railroad stations at airline expense. It is interesting to note that the arrangement involved both of the other methods of coordination already mentioned; for the two railroads acted as agents for the sale of the airline tickets, and the rail and airline schedules were coordinated to minimize the time spent at transfer points. It is perhaps significant that the Pennsylvania Railroad was able to perform its part of the service without additional personnel. Of course, such an arrangement for transcontinental service is now unnecessary and, even at that time, was not financially successful, but the passenger convenience provided by the methods used might readily be duplicated in connection with surface-feeder service to airlines.

The Columbus airport is not the only one that has been supplied with direct rail connection. The Gatwick airport in England was built in proximity to the railroad station there, and several airports on the continent of Europe have been supplied with direct rail connections.

Consideration has been given also to the possible use of railroad lines to provide rapid transit facilities to airports, which facilities could be conveniently utilized not only by workers at the airports but also by intercity rail-air passengers. Such an arrangement may be worked out in connection with the proposed Idlewild airport in New York.

Where international flights depart from an airport a few miles from the center of a large metropolis, direct rail connection makes possible the operation of special flight trains between the metropolis and the airport. A car on each such train might be fitted out as an office for the performance of customs and other pre-flight and post-flight activities requiring passenger cooperation, and the cost would presumably be absorbed in the air fare. In 1939, a rail service along the lines indicated was established between London and Southampton for Imperial Airways passengers and, it is anticipated, will be resumed for British Overseas Airways Corporation (successor to Imperial Airways) passengers after the war.

Although the high cost of railroad construction and the inability of railroads to operate a line successfully on a small quantity of traffic may discourage direct rail-air connection in many cities served by airlines, bus lines are not similarly handicapped. Because of the ease and small cost with which intercity bus service can be extended to airports, the possibilities of bus feeder service to airlines are provocative. To date, although little has been done to realize those possibilities, they have not been altogether ignored. The writer is informed, for example, that buses of the Blue Bird Lines, operating between Joliet and the center of Chicago, stop at the Chicago airport.

The general attitude of the bus companies is well expressed by a vice-president of a large bus corporation who, in a communication to the writer, suggests that, "so long as the bulk of their [the airlines'] traffic originates or terminates within the metropolitan districts of large cities," airport connections with intercity buses will be unnecessary. However, he adds that, if a considerable volume of post-war air traffic should originate or terminate at smaller communities, "it may then be feasible to encourage such passengers to use the facilities offered by our buses." Of course, the fact that Greyhound and some other bus companies have submitted applications to C. A. B. for authority to operate helicopter or other air-feeder service, may deter them from establishing surface-bus feeder service to airports.

4. *Joint Tariffs.* Joint air-surface tariffs could become a medium for the publication of attractive rates which might develop new traffic for all participating carriers. An instance of such a tariff was the Joint Air-Rail Passenger Tariff issued on behalf of Northeast Airlines, Boston & Maine Railroad, and Maine Central Railroad, effective August 8, 1940. It set forth round-trip fares—one way by air, the other by rail—at 90 per cent of the sum of the one-way fares. Gulf, Mobile & Ohio Railroad, in conjunction with Chicago & Southern Air Lines, Teche Greyhound Lines, and St. Louis, Red Bud & Chester Motorbus & Service Corporation, published a joint rail-motor-air tariff setting forth circle-tour excursion fares, effective July 7, 1941. Both tariffs expired on June 30, 1942, because of the curtailment of reduced fares and excursions. By that time, the Gulf, Mobile & Ohio "Merry-Go-Round" (as it was advertised) was becoming one of that railroad's most popular excursions. The Boston & Maine round-trip arrangement sold about 30 tickets a month, and was regarded by that railroad as a worthwhile experiment. A motor-air tariff setting forth fares for New York-Montreal round trips, one way by Champlain Bus Corporation and one way by Canadian Colonial Airways (now Colonial Airways), was in effect from May 15, 1940, to August 16, 1942. With respect at least to sales made at New York, that arrangement appears to have been less successful than the other two experiments. No joint air-surface passenger tariffs other than the three above mentioned have been filed with C. A. B. Although none of the three involves a feeder-service, they indicate the possibility of effective coordination through joint tariffs and there would appear to be no reason why such coordination cannot be effected in feeder service arrangements.

Stimulating New Air-Surface Business

It may be noted in passing that no joint air-surface freight tariffs whatever have yet been filed with C. A. B. In addition to the stimulation of new air-surface business through attractive rates—a result that might be achieved also through the use of proportional rates—such tariffs would of course save time and minimize the probability of error in the ascertainment of rates.

5. *Travel Plans.* Domestic airlines have established the Universal Air Travel Plan. Under that plan, upon deposit of a stated sum a concern is given a passenger service charge account. Its officers and employees, traveling on company business, need not pay cash for airline tickets. Instead, the company is billed monthly for tickets purchased. The subscriber is entitled to service on any domestic airline under the plan. Until recently, various railroads had somewhat similar plans without the interline feature.

If such a plan were to embrace one or several surface carriers together with the domestic airlines, so that a

(*Continued on page 852*)

How Halt Transport's Socialistic Trend?

Railroads being indispensable, they must be financed by government, if denied chance to thrive as private business

*By E. A. JACK**

JUST as the arteries, veins and capillaries are each essential to each other and necessary to insure free circulation of the blood, so every form of transportation is of value in commercial distribution, which is the blood of the body politic. Each agency has its place in our transportation picture and economic life, and the more nearly we can fit each form of transportation into its economic niche, the more nearly we shall arrive at a healthy and profitable transportation system as a whole.

Pessimistic talk about our transportation system in the post-war era, especially about the railroads, would be pure "bunk" if it were not pretty evident that it is deliberate propaganda put out by those who are seeking to wreck our American system of free and private enterprise. Because of these subversive activities it would be well for Americans to inform themselves about our transportation problem.

Railroads Indispensable

The railroads are and will continue to be the main arteries in our transportation system. No other method of transportation yet devised can handle freight overland in large volume as cheaply as the railroads. We have a tremendous inland territory which can be served only by some overland instrumentality. While motor trucks play and will always play a large part in our national transportation scheme, they, by the very nature of their limitations, must be auxiliary to the railroads rather than a means to supplant them.

Our inland waterways, exclusive of the Great Lakes, are a big economic question mark. If the users of these waterways were compelled to pay the cost of maintaining the navigability of such waterways, their cost of operation would, with a few exceptions, exceed the going rail rates for like distances. In this country, the cost of creating and maintaining waterways artificially made navigable is seldom justified economically. The airplane will always be a premium vehicle and will have to be treated as such.

While the economic niches of each of these forms of transportation can thus be broadly defined, not one of them wants to admit that it has any such niche, but each is out to get the other in a wild scramble for the business available. The result is a vast amount of duplicated service for which somebody has to pay. If we are to have healthy transportation systems we must evolve some sympathetic plan which will foster each form of transportation within its economic sphere and at the same time protect each from the other. As a basis for approach to this tremendous and highly complicated subject, the following platform is suggested, which should underlie all consideration of our domestic transportation problem:

(1) To maintain private ownership and operation of all forms of transportation in full vigor.
(2) To reduce governmental supervision to a minimum.
(3) To promote and maintain progressively adequate transportation at the lowest possible cost consistent with services performed.
(4) To develop and preserve the inherent advantages of each form of transportation on its merits without discriminating subsidies direct or indirect.
(5) To eliminate governmental operation of transportation facilities in competition with privately operated facilities.

With this platform no one who believes in private enterprise will quarrel. How shall the platform be put into effect? The only comprehensive and reasonably concrete proposal advanced to date is the so-called "integrated system" idea sponsored by the Transportation Association of America. Let's examine that idea. It has not yet become a plan.

It is unfortunate that the proponents of the "integrated" idea did not accurately define their meaning, as it has been generally taken to mean an "absorption" plan or, bluntly, a "monopoly" plan. The verb "integrate" means "to bring together the parts of." The human body is an "integrated system." Every single integral part retains its individuality and identity, but each and all are coordinated into an integrated system—the harmonious functioning of the whole dependent upon the full and healthy functioning of each integral member.

"Integration" and Competition

A transportation system developed along similar lines, with each of its integral parts functioning fully within its sphere, but all coordinated and responsive to a responsible head, would be ideal. Even though, unlike the human body, our transportation body consists of detached members, each of which can be operated independently of the other and to a great degree exists independently of the other, that fact does not render the integrated idea inoperative; in fact, it makes it imperative, if ruinous competition is to be avoided.

The fourth plank of our platform calls for the development and preservation of the inherent advantages of each form of transportation. Would the integrated plan as proposed do that? The theory is that as each integrated system would have an equally integrated competitor, that such competition would necessarily compel each system to develop and utilize each of its integral parts to its full economic value. However, unless there were pressure from some outside and uncontrolled influence, it would be found that the weaker or smaller integral part or parts would sooner or later become subordinated to the greater. The greater would monopolize. And that is the fear which is at the bottom of the objections to the "integrated" idea. However, such subordination or monopoly is not an unavoidable consequence of integration.

As was said before, the railroads are and will continue to be the main arteries, and any approach to this subject which does not recognize that fact is doomed to failure.

Only Railroads Self-Supporting

The railroads constitute the only form of all-commodity transportation which is today standing on its own. Every other form of transportation is receiving a subsidy from the taxpayers. The general theory is that the building of highways, improvement of waterways and building of waterway terminals, construction of airports and providing of auxiliary services, are all in the public interest. No one will quarrel with that as a general statement. (But is not the public interest served in much greater degree by the railroads?) Obviously, all of the public cannot use these facilities, nor benefit, at least directly, from them; hence, clearly, the thing to do is to make the user of any facility pay for that use. The building of the Panama Canal was a national necessity and its maintenance is a national necessity, but we assess tolls against all commercial users of it (and private users too) and these tolls are passed on to the user of the service in the transportation charge he pays.

Gasoline taxes are assessed, theoretically at least, to build and maintain the highways, and each user pays as he uses, and this gasoline tax paid by commercial users is likewise passed on to the user in the transportation charge. The inland water carriers, however, pay nothing for their use of these waterways, and the airways enjoy a subsidy of fifty per cent or more of their total operating expenses. Thus, the inland water carriers, the airplane and, it is claimed, in some degree, the motor trucks, are being kept in business by subsidies paid by the taxpayers as a whole. The railroads

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are the largest taxpayers in the country, and their taxes are being used to maintain these other forms of transportation—while other forms, insofar as they compete with the railroads, do not create any additional commerce but handle only the freight and passengers which the railroads would otherwise handle. Thus, the railroads not only lose the revenue on such business but they are taxed out of their remaining earnings to maintain the instrumentality which is used to deplete those earnings. As if this were not enough, the railroads are then forbidden to use the instrumentalities that their taxes have helped to create. There can be no justification for such discrimination.

Does Business Want Socialism?

Whether airplanes, trucks and barge lines should or should not be subsidized is not the issue here. If the construction and maintenance of landing fields and highways, the making of rivers navigable and the cutting of canals is in the public interest and is done with public money, then every taxpayer is entitled to use those facilities under proper regulation without discrimination.

The railroads are indispensable; we have got to maintain them. The gage showing whether they are maintained adequately to continue existence as private enterprise is the stock market price of their securities. This gage indicates that the railroads have not been maintained as a reliably healthy private enterprise since the onset of the great depression. The only way we can maintain them is to pay them adequately for the service they perform. Any American who says that whether or not the railroads can once again be made an attractive investment for equity capital is none of his business is saying, in effect, that whether or not the country becomes socialized is none of his business. If we tax the railroads to maintain competitive instrumentalities, we shall have to increase the amount we pay them for the services left for them to perform. Thus, instead of reducing the charges we pay for transportation, these competitive instrumentalities really tend to increase them.

Did not some motor carrier just recently petition the Interstate Commerce Commission to increase some railroad rates because the trucking companies could not make any money at railroad rates?

Waterways Create No Traffic

And the rivers! While some shippers may benefit directly from the lower charges of the barge lines, it is also a fact that if the legitimate costs of maintaining the river roadways were laid against the tonnage handled, the aggregate cost would exceed that which it would have cost to move the same tonnage by rail at going rail rates. (There are some exceptions to this in certain restricted localities, but the statement is generally true.) But that is not all. The tonnage would have moved anyhow, regardless of the rivers. The development of our inland waterways has not increased the commerce of this country by as much as one ton. All that such development has done is to force industry not so located as to be able to use these waterways to pay higher rates to compensate the railroads for the loss of revenue on freight handled by the water lines to those more favorably located.

There are three methods of adjusting these injustices:

(1) Eliminate all subsidies. (The best way.)
(2) Grant to the railroads some compensating subsidy. (The least desirable way.)
(3) Permit the railroads to use without prejudice, but with proper safeguards, the facilities provided for their competitors, which facilities the railroads' taxes have helped to construct.

Number three is the only equitable thing to do under existing circumstances, and that is just what the so-called "integrated" plan seeks to accomplish. But how can this be done without opening the way to monopoly? I offer the following suggestions, dividing our transportation field into three groups:

(1) Airplane: This we will call the premium group.
(2) Railroads and Motor Carriers: These we will call the standard group.
(3) Water Carriers: These we will call the sub-standard group.

In many instances motor carrier service is really a premium service and in some instances water carrier service is comparable to and frequently better than rail service, but such situations are exceptions.

The Premium Group—Railroads individually, or two or more railroads jointly, should be permitted to own and operate, or to own stock in, operating companies of the premium group, whether such service is in direct competition with the owners' rail service or as an extension of that service.

Competitive Safeguards

Where the rail owned service is in competition with independently owned services, the rail owned service would not be permitted to reduce rates below those charged by the independently owned service, nor to increase its services beyond those of the independent, unless such independent first reduced its rates or increased its services, or by mutual agreement or upon the consent of the appropriate regulatory body. Should the independent operator discontinue operations, then rail operation would be compelled to continue its service without diminution and at the same rates until authorized by an appropriate regulatory body to make changes.

Where there is no independently owned service and competition is between rail owned services, there would be no such restrictions, but any reduction in rates or increase in service would be subject to complaint and in such case would have to be justified before the appropriate regulatory body. This would also hold with respect to decrease in service or increase in rates.

Sub-standard Group—By and large, the outline for the premium group would cover for the sub-standard group.

Standard Group—Railroads should be permitted to own and operate motor trucks when they deem such operation to be advantageous. Operation in competition or parallel to the owner's rail service would be permitted only as an adjunct of the railroad at railroad rates and on railroad bills of lading. In other words, if the XYZ Railroad found that it could handle certain freight between A and B, points on its line, by motor truck to better advantage than by rail, it should be permitted to so handle, but at the railroad's published rates and on railroad bills of lading or contracts. In other words, it is no concern of the shipping public nor of the regulatory bodies what kind of facility is used by a railroad to transport freight between points served by it so long as the freight is handled for all at published rail rates and without discrimination.

Railroad Operation of Trucks

Railroads should be permitted to own and to operate trucks as feeders or extensions to their line. But, except in cases where they were specifically authorized to do so, they would not be permitted to handle freight between points on the truck route, but only that moving in connection with a rail haul. Railroads should be permitted to make through joint rates with independently operated motor carriers.

Bus Lines—Railroads should be permitted a pretty free hand in the ownership of bus lines. Local passenger trains are rarely remunerative and often are operating nuisances. Bus lines on short hauls give the public better service and can do it at lower rates than the railroads. While there are many long haul bus lines, their real value is in the short haul or between station travel. This enables the railroads to eliminate or greatly reduce local passenger service and by eliminating stops reduce the running time on through trains.

Under such plan as proposed the railroads would be able to "integrate"—"to bring together the parts of"—transportation and so be able to give the public a comprehensive transportation service as the economics of each situation would warrant. Cut-throat competition would be eliminated or at least greatly minimized; independent operators would be protected; investment of private capital would be encouraged and the continuance of private enterprise assured.

These ideas are, admittedly, bare outlines and probably some of the suggestions are highly debatable, but they do provide a basis for an intelligent approach to the problem. It's high time the taxpayers of this country come to the rescue of the railroads which, for all too long a period, have been kicked around by political opportunists, who are now deliberately scheming to force the railroads into government ownership—not for the good of the country but to further the socialistic ideas of these political schemers and for their personal gain.

How the Army Has Learned to Railroad

Not easy to retain transport lessons from one war to next with this branch inactive in peace-time

*By Brig. Gen. ANDREW F. McINTYRE**

BEFORE Pearl Harbor, the Quartermaster General of the Army was responsible for all domestic War Department transportation by railroad and by water, and he was also responsible for highway transportation performed for the Army by common carriers. The Supply Division of the War Department general staff contained a Transportation Branch largely concerned with policy and planning but having as well some operating functions. The Military Railway Service was organized on paper only, except for one battalion in training, and was a component of the Corps of Engineers.

When the Army was reorganized in March, 1942, a Transportation Service was included as a part of the Services of Supply, and all the transportation functions of the Quartermaster General and most of those from the general staff were transferred to it. Shortly afterward, this so-called Transportation Service was expanded to a full corps, commanded by the present chief, Major General Charles P. Gross, and the Military Railway Service was taken out of the Corps of Engineers and made a part of the Transportation Corps. The Military Railway Service, with the assistance of American railroads, has been organized into one of the finest of the Army's services, moving the supplies and implements of modern warfare from seaports all over the world to the fighting soldiers in the several theaters of war.

In the Army the job a man or a unit or an organization may be given to do is called a "mission." The mission of the Military Railway Service is to operate and maintain all military railways in theaters of operation and also those railways in the "zone of the interior," that is, in the United States, that are used for the training of its troops.

Army Railroading in 1861

The Military Railway Service, as such, in this country, first came into being during the War Between the States. In 1861 transportation was available by sea and waterways, by highways and railroads. The first three media had always been used for wartime transportation. Railroads were comparatively new. Their use for military purposes was not understood and Army commanders at first refused to move their forces any great distances from supply bases if they had to depend on railroads. Today, no military commander worthy of his command would plan his strategy without including and planning to use all forms of transportation—railroad above all. In the Civil War it soon became apparent that the existing railroad lines in the war zone must be under the absolute control of the military authorities, and, therefore, the Secretary of War, on February 11, 1862, appointed Daniel McCallum as Military Director and Superintendent of Railroads in the United States. McCallum, who was general superintendent of the Erie Railroad, was later made a brigadier general, and his title was changed to General Manager of Military Railway Service. This was really the beginning.

General McCallum was eminently successful, but he had plenty of troubles. His train movement was interfered with, and his orders were changed by local military commanders. Some thought they could get along without railroad troops. The record has it that on one occasion a train was held about two hours while a general's wife did her shopping. More efficient operation was brought about by a strong order issued by the Secretary of War in November, 1862, prohibiting interference by anyone outside the Military Railway Service.

Lessons of '60's Shelved

The necessity for construction, reconstruction, and rehabilitation of railroads in the South soon became apparent. The wide variation in track gages prevented interchange of equipment and the gage had to be made uniform. The Military Railway Service experienced trouble in maintaining roadway and structures due to raiding parties and retiring troops of the Confederate Army.

In May, 1862, a Construction Corps was formed in Virginia with Herman Haupt as its head, first as a colonel and later as a brigadier general. One of Haupt's conceptions, thought by many to be a more recent development, was the construction and storage of interchangeable bridge trusses in spans of 60 ft., so built that the units could be transported on flat cars, or by ox teams or otherwise, to the place where needed and there hoisted into position by machinery arranged for the purpose. One of Haupt's foremen stated that in this manner he was able to build a bridge "about as fast as a dog could trot"—and later when the Massaponix bridge, six miles from Fredericksburg, was burned, a new one was put up in its place in a half day—a feat which led some onlookers to exclaim, "The Yankees can build bridges quicker than the enemy can burn them down."

General Haupt was a pioneer in the art of bridge construction and wrote the first accepted book on bridge stresses. After the war, he was called upon by many railroads to supervise the construction of major bridges. At one time he was chief engineer of the Pennsylvania Railroad and later was called upon to build the Hoosac Tunnel, through which the Boston & Maine Railroad operates.

After the Civil War no provisions were made to include the Military Railway Service as a part of the regular Army, and it was, therefore, "inactivated."

The Germans Learned

At the close of the Civil War the Germans were quick to absorb and apply the lessons of the War Between the States, and they found that a permanent railway construction force was necessary. They had such a force at the time of the outbreak of the Franco-Prussian War in 1870, but the permanent force during that war contained no railway operating troops, and the Germans had to make use of 3,500 civilians with railroad operating experience to overcome the deficiency. Right after the Franco-Prussian War, Germany did, however, establish a permanent construction and operating force, and this was perpetuated up to World War I and was retained for service in the present war.

We in the United States had made no effort to establish railway troops as part of our regular Army, and it was under these conditions that we entered World War I, with plenty of enthusiasm, but with little knowledge of the need for trained railroad troops and no planning for them. The trials and tribulations of the Transportation Service, A. E. F., were many and the lack of adequate planning was emphasized by the eight reorganizations of the service in 16 months.

In this country there were raised and sent to France, or organized in France, 20 operating regiments, six maintenance of way regiments, eight car and 12 locomotive repair regiments with a total strength of 897 officers and 32,149 enlisted men. In addition, the Transportation Service at one time or another had control of 20,000 stevedoring and inland waterway troops. Most of the railway personnel was drawn from the ranks of American railroads.

The Transportation Service was

This article is an abstract of an address by General McIntyre, Chief, Rail Division, Army Transportation Corps before the New York Railroad Club, November 16, 1944.

headed by Brigadier General W. W. Atterbury of the Pennsylvania Railroad, and he organized the service in accordance with American railroad practices with the additions necessary for military operations. His success is a matter of record. At the time of the armistice, his principal assistants were Colonel Wilgus from the New York Central Railroad and Brigadier General R. D. Walsh of the regular Army who, together with two other of the General's assistants, headed departments controlling the Zone of Advance and Services of Supply. Each of these departments was further divided under general superintendents of transportation with an assistant general manager in charge of personnel. There were also thirteen grand divisions forward and six in the rear S. O. S. The Transportation Service was finally placed under the Commanding General, Services of Supply.

Rebuilding Began in '39

The French criticized our system as cumbersome, ornate, and overstaffed. Some of their criticism may have been justified. They criticized our lack of discipline. For various reasons many of our train crews forcibly ejected French pilots assigned to their trains and at the armistice deserted trains on sidings, main tracks, and at stations to join the general celebration. If you sympathize with this criticism, you may find that you are criticizing some of our national characteristics.

The National Defense Acts of 1916 and 1920 have been hailed as our first rational military policy. At last we had learned something. While the provisions of the Acts were never fully carried out with regard to the regular Army, the 1920's saw the development of our Officers' Reserve Corps whose members form the bulk of the officer personnel of the A. U. S. under arms today. First stages of planning for the present Military Railway Service were undertaken by the Corps of Engineers. The Service existed through the peace years as part of the Reserve Corps, and its officers were recommended by the railroads and commissioned in the Reserve Corps for a five-year period and commissions were renewable thereafter. Position and rank depended on civilian position with the railroads by which they were employed.

Colonel (now Brigadier General) Carl R. Gray, Jr., executive vice-president of the C. St. P. M. & O., held the reserve assignment of Manager, Military Railway Service. As the peace years went on, interest lagged, and until about 1939 the Military Railway Service was at its lowest ebb.

The Chief of Engineers, then General Schley, determined to revitalize the Military Railway Service, and Colonel (later Brigadier General) C. D. Young, vice-president of the Pennsylvania, was given the mobilization assignment as Chief, Railway Branch, office of Chief of Engineers.

It was decided that with General Gray as the field man and with General Young in charge in Washington, steps should be taken immediately to stimulate the interest of the railroads of the country in the Military Railway Service. General Young and General Gray and others were unstinting of their time and efforts in rendering assistance. General Gray personally visited many of the railroads and talked with the chief operating officers of each road, impressing upon them the necessity of keeping the reserve fully officered. Thus we came to December 7, 1941, with one railway operating battalion which had been activated as part of the regular Army and which was on duty and in training on the Claiborne-Polk Railway. All other units were constituted on paper only.

The Claiborne-Polk Railway was constructed by the Corps of Engineers to be a training railroad for operating battalions of the Military Railway Service. In June, 1941, during its construction, the 711th Railway Operating Battalion, activated at Camp Claiborne, La., assisted in the construction of the line as part of its technical training and thereafter operated the railroad until fully trained. The remainder of the Military Railway Service as of December 7, 1941, was still on a reserve status, and it consisted of General Gray's headquarters—five railway grand divisions, 20 railway operating battalions and three railway shop battalions.

Early in 1942 the need for railroad troops became apparent, and reserve units were called to active duty as required. Slowly at first, and with an accelerated tempo during 1943 and 1944, the reserve units were all called into service, so that at the present time we have only a few units now in training in this country. The trained troops are all in service overseas. In addition to operating and shop battalions, we have miscellaneous units such as mobile workshops, hospital train maintenance crews, base depot companies and transportation companies, an aggregate of 105 Military Railway Service units containing approximately 2,000 officers and 42,000 enlisted men.

Railroading All Over the Earth

These troops are scattered all over the world. They are in New Guinea, Alaska, New Caledonia, England, France, Italy, Iran, and India. They also supported the invasion in Africa where the Moroccan railways had been barely able to support the domestic economy of the country. Our railroad troops handled the transportation necessary for that and also about 1600 carloads of Army freight during the first four months of the campaign. It is true that we sent some engines and a few hundred freight cars over to them, but the job was done primarily because of the ability of the American railroaders to accomplish what the natives thought impossible.

In Iran temperatures range from 140 deg. Fahrenheit at the Pesian Gulf to 20 above in the mountains, all within one engine run. There are 152 tunnels on the line from Abadan up to Teheran. After we took over the Persian Railroad, our boys not only moved the heavy volume of Russian Lend-Lease promptly but put such great quantities of it up against the Russians that they had to build supply dumps on the shores of the Caspian sea to await trans-shipment.

In India Colonel Appleton (from the P. R. R.) made a survey at the request of the British, of the Indian State Railways, and, while he was over there, it was decided to take over the Bengal & Assam Railway in northeastern India and operate it with American troops; and Colonel Appleton was placed in charge. He increased the capacity of the line 46 per cent in the first 26 days of his control. This railroad crosses the Brahmaputra river at Gauhati, and everything has to be floated across the river. Think of the Lehigh Valley having to float all of its traffic across the Delaware at Phillipsburg, or the New Haven floating everything over the Connecticut river at Saybrook and you get some idea of Appleton's achievement in effecting such an increase.

A Big Training Job

In France we now have a large military railway force. I can't tell you how great it is, nor how much equipment we have sent over, but with the rapid advance of Patton's army they have a tremendous supply job to do, and they have done it, and so it goes. Success in all the theaters has crowned the efforts involved in careful planning and in adequate training, and railroad men who have helped us so generously may feel proud of the men they have given the Army. No one is yet sure as to the requirements of the future, but whatever demands may be made upon the armies of the United States, you will find Military Railway troops right up there close behind the battle lines doing their part.

As time passed, more and more railway troops were needed, and as the various units were activated, it was found that the facilities of the Claiborne-Polk Railway were insufficient to provide technical training for the increasing numbers of men, and so the War Department approached some of the larger roads of the country with requests that they train these railway troops on their properties. The railroads were quick to respond, and arrangements to do that were made, with the result that the greater part of our railroad troops have been trained in actual service and under every-day working conditions on the lines of the Missouri Pacific, the Southern, the Central of Georgia, the Texas & New Orleans, the New York Central, the Pennsylvania, the Burlington, the Omaha, the Union Pacific, the Great Northern, the Santa Fe, the Northern Pacific, the Wabash, and others. Without the cooperation of the railroads, it

is doubtful that the War Department could have trained its railroad troops within the required time. The efficiency of the training and the successful results attained are now reflected in the efficiency with which these Army railroaders are operating under adverse conditions in the many theaters overseas.

We have tried in the Military Railway Service, as far as practicable, to duplicate the operating and maintenance organizations of commercial railroads. The operating battalions, which is really the basic unit, is organized so that it may function effectively in the operation of a portion of any railroad ordinarily coming under the jurisdiction of one division superintendent. It contains two platoons of fifty train crews each, and it also has a maintenance-of-equipment company for the operation of engine terminals and car repair tracks, and a maintenance-of-way company for the maintenance of roadway and structures. The shop battalion is set up so that it may operate a medium-sized back shop to take care of heavy running and classified repairs, and this type of unit has been used successfully overseas for the erection of freight cars which were shipped knocked down, and for preparing locomotives for service after they were unloaded from ships in overseas ports.

We have some exceptionally fine officers and men in these groups, and it is worthy of mention that they could not have been brought together and organized into such closely knit and efficient groups without the assistance of our own railroads at home who gave up these men upon request of the War Department and who have carried on without them, faced all the while with an increasing volume of domestic traffic.

Lend-Lease Equipment

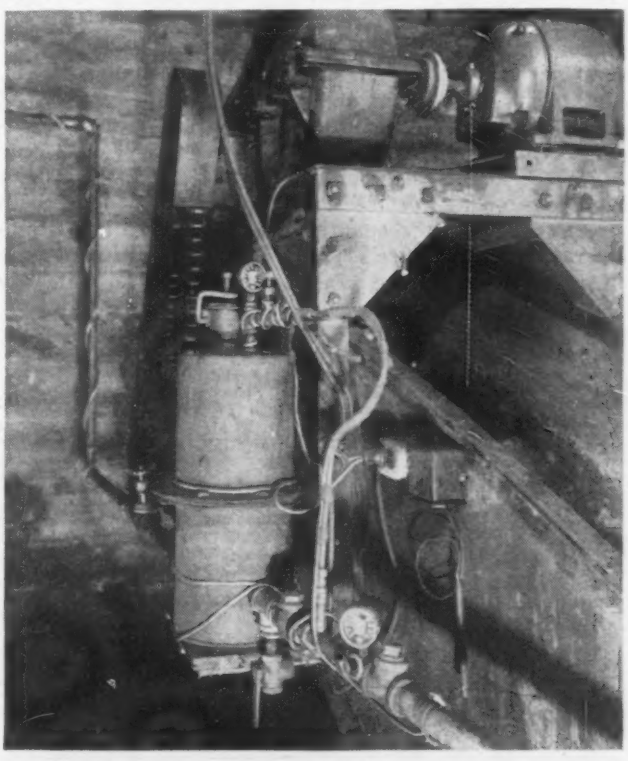
We have sent a good many locomotives to Russia. Some have been shipped from the Atlantic seaboard and some from the Pacific ports. In general, two types of locomotives are involved—the Consolidation type and Decapod. They are built for 60-inch track gage, and so, of course, cannot be moved on their own wheels in this country. These engines were built in the east by the Baldwin Locomotive Works and the American Locomotive Company, and, as I have said, some of them had to be transported across the continent to Pacific coast ports. That was quite a problem. The Consolidation-type engine, by cooperation among the railroads concerned, was moved on heavy-duty flat cars over prearranged routes so that they would meet clearance gages and were unloaded at the port by the use of a novel device which required only one hitch to lift the locomotive. The 2-10-0 engines were larger and presented a different problem. They wouldn't clear over any route to the Pacific and had to be shipped partially disassembled and then erected on the coast where special 60-inch gage tracks had to be provided and where dual-gage trackage had to be laid from the point of erection to shipside. The cooperation of the manufacturers was superb, and the shipments have been made as planned. These engines are still moving; the order has not yet been filled. I tell you this to indicate the problems faced in the procurement of railway equipment and supplies—not only for our own use but for the use of our Allies. That responsibility, both Army and Lend-Lease has been centered in the Transportation Corps, which, after needs were defined, has initiated the procurement of all items of railway rolling stock.

Dust Killing Device for Coaling Stations

The Ross & White Company, Chicago, has developed a device named the Equa-Mixer, for spraying a mixture of Sealtite and water on coal, which eliminates dust and which can be used in cold weather without freezing the coal. The purpose of the device is to save the wasted coal usually blown away in fine dust at coaling stations; to improve employee relations by providing cleaner working conditions for the locomotive crew; and to eliminate the nuisance of coal dust where coaling stations are located near densely populated areas.

While many arrangements have been used to prevent dust by spraying water on coal, such devices, in cold climates, must be shut off in winter because of freezing conditions. The use of Sealtite is said to eliminate this difficulty under even the most severe winter conditions. This compound, which is mixed with water in the Equa-Mixer in a proportion of 100 to 1, leaves a coating on the coal after the water evaporates, which is basically petroleum. Sealtite weighs 8.32 lb. per gal. and the cost of application is said to range from ½ to ¾ cents per ton of coal.

The mixing device, or Equa-Mixer, consists primarily of a steel tank divided internally into two compartments by a rubber hat, or loose diaphragm, and various pipe and valve connections to provide for adjustment and automatic mixing. The water supply pipe is connected to one side of the tank at the bottom and water fills the lower compartment of the tank. The upper compartment is filled with Sealtite compound through an opening in the top. The water pressure on the diaphragm forces the compound out the top through a pipe line into a special mixing fixture, where the compound is mixed in the correct proportions with water from the lower compartment of the tank. A regulator valve and a back check valve in both the water line and the compound line control the flow of fluids between the tank and the special mixing fixture. From this fixture the mixture passes through a pipe line to the spray nozzles. To prevent the water from freezing before it reaches the Equa-Mixer tank, the inlet line may be wrapped with an electrical heating cable.



An Equa-Mixer Installed on the Side of a Coal Feeder at a Coaling Station

Rail Output in 1943 Highest in 14 Years

CLIMBING to a new high since 1929, rail production in the United States in 1943 totaled 2,126,996 tons, a gain of 30,837 tons as compared with 1942, according to figures published in the annual statistical report of the American Iron and Steel Institute for 1943. Thus, starting in 1938 when the output was 697,642 tons, 1943 was the fifth consecutive year in which rail production has registered a gain over the preceding year. The foregoing figures, and those given below, are in net tons.

The production of rail in 1943 and in previous years back to 1927 is shown in the table in which the output for each year is broken down into four weight groupings. In previous years six weight groupings were shown, but because of the reduced number of rail sections being rolled, coupled with the fact that the total production of rail is now largely concentrated in a relatively few sections, the logical move was to consolidate the weight groups into a smaller number of classifications.

It will be seen from a study of the table that, although the total production of rail showed an increase as compared with 1942, the output of the two intermediate weight groups declined, these losses being more than offset by increases in the lightest and heaviest classifications. Specifically, the weight group including sections over 60 lb. and less than 100 lb. showed a decrease of 73,847 tons, or nearly 17 per cent, while the output of rails weighing 100 lb. and less than 120 lb. declined 77,012 tons, or 8.3 per cent. These decreases were overcome almost entirely by an increase of 142,538 tons, or 23.5 per cent, in the production of rails weighing 120 lb. and over. This was augmented by an increase of 39,158 tons, or 31.4 per cent, in the production of rails weighing 60 lb. or less.

Of the total tonnage of rails produced in 1943, 2,047,075 tons, or 96.2 per cent, were rolled from open-hearth steel. Although the quantity of rails rolled from Bessemer and electric steels (23,747 tons) constituted only a small fraction of the total, the tonnage in this category

Production of Rails by Weight Per Yard—Net Tons

Years	60 lb. or less	Over 60 and less than 100 lb.	100 and less than 120 lb.	120 lb. and over	Total
1927.....	*181,256	†798,226	1,472,155	691,627	3,143,264
1928.....	*150,301	†662,053	1,348,199	804,639	2,965,192
1929.....	*158,326	†574,080	1,381,631	934,758	3,048,795
1930.....	*107,101	†391,079	935,756	664,085	2,098,021
1931.....	*56,100	†166,793	555,242	518,546	1,296,681
1932.....	*18,654	†47,374	240,902	143,944	450,874
1933.....	55,010	63,153	172,488	175,601	466,252
1934.....	78,495	101,640	550,639	400,677	1,131,451
1935.....	63,982	112,431	381,696	238,812	796,921
1936.....	107,644	135,585	684,910	438,089	1,366,228
1937.....	113,889	218,374	815,280	471,685	1,619,228
1938.....	50,375	85,177	371,534	190,556	697,642
1939.....	92,994	63,611	620,992	515,050	1,312,647
1940.....	140,443	339,672	688,109	510,762	1,678,986
1941.....	172,264	323,968	820,695	610,924	1,927,851
1942.....	124,938	438,562	924,851	607,808	2,096,159
1943.....	164,096	364,715	847,839	750,346	2,126,996

* Under 50 lb. per yd.
† 50 and less than 100 lb. per yd.

reflected the tendency to increase that has been in evidence for several years, comparing with an output of 21,334 tons in 1942. Also included in the total output for 1943 were 49,440 tons of rails rolled from old rails, and 19,179 tons of girder and high tee rails.

In the face of the increase in rail production, the output of fastenings underwent a moderate reduction, declining from 718,258 tons in 1942 to 665,956 tons in 1943, a drop of 52,302 tons, or 7.3 per cent. The total output of fastenings included 167,260 tons of angle splice bars, which was 9,645 tons, or 5.5 per cent less than in 1942, and 464,365 tons of tie plates, which represented a decrease of 38,172 tons, or 7.6 per cent, as compared with the previous year.

Should Carriers "Feed"

(*Continued from page 846*)

concern using passenger service on one or more surface carriers and airlines could receive a single passenger transportation bill monthly, the economy and convenience to the concern would be of great value. In that way, another argument against the establishment or continuation of air feeder service could be firmly implemented.

Up to the present time, air-surface carrier coordination has lagged. A spirit of mutual fear and distrust seems to prevail, engendered in part on one side by the proposals by certain surface carriers to engage in air transportation and on the other side by the increased competition that air transportation is expected to provide in the post-war period. Yet instances of coordination are not altogether lacking. Railroads in many cases cooperate closely with airlines in providing reservations for airline passengers who have been disappointed by the cancellation of a flight. And, of course, there is the cooperation of the airlines with Railway Express Agency in providing air express service. Some additional instances of coordination in the past have been noted above. It remains to be seen whether serious efforts will be made to realize the genuine possibilities of air-surface coordination, or whether surface carriers will permit the proposed air feeder services to win by default.

Communications . . .

What Qualifications for Public Relations Work?

No one will thank me for this piece—but something needs to be said that is not being said about the qualifications for railroad public relations work.

Making public relations directors out of men with long experience in their own organizations, but with no newspaper or other writing experience, is a policy that should be critically examined. Space in the news columns of newspapers is highly valuable and it takes newspaper experience to know what editors want. I'm talking about news and features which require both training and imagination to visualize, not about routine financial items or appointments of company officers.

By a public relations officer, I mean an officer whose duties include such things as getting newspaper space for news favorable to his company by writing it so that editors will want to print it; handling advertising intelligently; and interpreting the public to railroad management—so that the latter may avoid offense and, instead, make friends for the property.

A conception of news, how to find it and how to write it, comes only from actual experience. In two months or less, any competent newspaperman can learn enough about a railroad to begin doing a productive publicity job for it. A *good* newsman knows how to write all types of stories, and, because of his varied training, learns quickly. I believe a capable newsman can learn enough railroading to do effective publicity in far less time than a man thoroughly grounded in railroading can learn to do acceptable writing for the newspapers. A public relations man with newspaper experience will learn railroading in his job—but a man with railroad experience only, cannot similarly learn news writing

in a publicity job, because he is too remote from the place where his product is judged.

A first-class newspaperman has had plenty of experience writing about the troubles of corporations and of people; for that reason, he is a good guide to ways to avoid trouble. Potential corporate difficulties translate into headlines in his mind—while they're still corporate secrets, with a chance to be remedied. He can help very little, though, if he doesn't know what's going on until it's too late to avoid trouble, or if he isn't given authority or asked his opinion. The modern solution is to make the public relations officer responsible to the chief executive, and to give him the opportunity and assignment of reading all correspondence from the chief executive. What better and easier way can be found to keep the public relations man informed on company policy?

The air lines are making heavy raids on the traditionally underpaid newspaper industry, and are overlooking no bets in the unceasing battle for publicity and consequent favorable public opinion. Many other industries likewise realize the value of such service to them. True, the public realizes that the railroads, collectively, have done a magnificent war job. However, how many industries can you name that do not enjoy a similar reputation?

A recent list of railroad public relations representatives showed a surprising percentage of traffic officers or other executives, designated to handle public relations, apparently, as a spare-time assignment. This work is a specialized function, requiring a high degree of skill and experience. I would not consider that a newspaper man could handle the highly intricate work of a traffic executive as a side-line; nor that a traffic man or other departmental specialist could take on the equally-intricate duties of news writing as a spare-time function.

The first principle of success in dealing with newspapers is to make available to them what they want. Reporters are going to write up serious railroad accidents whether the railroads co-operate with them or not. It is better that they get the facts, however unflattering, straight from a competent railroad officer, rather than from poorly informed bystanders; or that the reporter be forced to draw upon his imagination. Compelled to such expedients, the reporter will usually make the story worse than the facts—and he will miss the extenuating circumstances, which railroad officers could give him to soften the public criticism of almost any accident. Such observations are elementary, but how many railroads co-operate with newspapers instead of antagonizing them in their demand for information on accidents? Comparatively few, I fear.

One railroad which used to have this hostile attitude toward the press, only succeeded in getting an unusual amount of unfavorable publicity. Barred from the right-of-way in one accident, a news photographer produced a telescopic lens and snapped his pictures, which his angered editor then splashed over all eight columns of page one. The editor of another metropolitan newspaper recently said that the next time a certain railroad in his territory "tries to make a mystery out of an accident," he will assign two men to the story, full time, with instructions to keep it alive for at least a week. If routine details are given promptly, the story is worth carrying prominently for the first day, and quickly dies. Making it a mystery keeps it alive, starts unfounded rumors, creates public suspicion and destroys newspaper good will. A railroad with a competent public relations department and the proper attitude toward it, would not make mistakes in dealing with such an elementary situation.

PUBLIC RELATIONS OFFICER

A Sense of Humor Helps

New Brunswick, N. J.

TO THE EDITOR:

Nowadays the railroad traveler must have a sense of humor. If he cannot face difficulties and confusion with a smile he had better stay at home.

I recently had to book passage from Los Angeles to my home here and much to my surprise I was immediately assigned a roomette to Chicago and a lower to Trenton. Upon examination of my tickets, however, I found I was to leave Chicago the evening before I was scheduled to arrive there.

Fortunately they were able to exchange this for an upper on the proper date so I started my journey in high spirits. Imagine my surprise when I boarded my train in Chicago, for I had a Pullman ticket to Trenton, on a car going to Washington, and was booked for upper 10 on a car with only eight sections!

Of course I got through all right. They put me in an upper in a New York car in space assigned to the crew. Did this make me a temporary member of the Brotherhoods?

The point of this letter is that if we don't take ourselves too seriously we can get to our destination and really laugh at experiences like this.

NORMAN C. MILLER.

Transverse Fissure Caused A. C. L. Accident

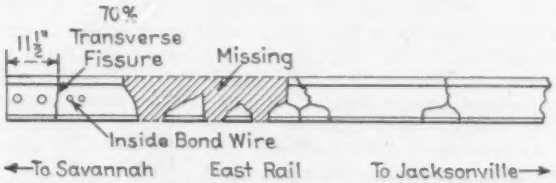
WILMINGTON, N. C.

TO THE EDITOR:

The newspapers of November 18 and 19 carried references to a derailment on our line near Hortense, Ga. The facts, since developed, follow: Southbound passenger train No. 91, West Coast "Champion," operating between New York and Tampa, Fla., derailed near Hortense, Ga., Saturday, November 18, at about 8:50 a. m. The train consisted of 18 all-steel cars handled by three 2,000-hp. Diesel locomotive units. The rear truck of the third Diesel unit and the 15 cars following left the rails. There were no fatalities. A number of passengers and employees received minor injuries, none serious.

A formal investigation to determine the cause of the accident was held at Waycross, Ga., on November 24, attended by representatives of the Bureau of Safety of the Interstate Commerce Commission, and the general manager, chief engineer, general superintendent, and superintendent of motive power of the Coast Line. The investigation developed that the accident was caused by a rail breaking due to a 70 per cent transverse fissure, the fracture occurring 12 inches from the receiving end of rail immediately at the end of the rail joint bar and inside the bond wires.

The track at the point of accident is laid with 100-lb. RE-section rail connected by four-hole continuous-type joint bars 24 in. long, with 24 ties to the rail, is fully tie-plated, and is supported



Sketch of Receiving End of Rail Failing in Track, Which Resulted in Derailment of Train No. 91 on November 18

Rail 100 lb. RE OH Tennessee-5-1929, Heat No. 877916, Rail Letter B, Ingot No. 21

under the ties by 9 in. of slag ballast over 3 in. of gravel ballast and is dressed out to the top of the ties with crushed granite. The roadbed is an 8-ft. fill 24 ft. wide at the top.

The broken rail was rolled in the year 1929 and was laid in track on June 5, 1929. Inspection of the rail in the track at the point of accident had been made by a Sperry rail detector car on November 11, 1944, (seven days prior to the date of the accident) which inspection did not disclose any defect in this rail. However, because of the attachment of the joint bars to the rail, the Sperry car will not locate a fissure immediately at ends of the joint bar or throughout the length of the joint bar.

The track in this vicinity is equipped with three-position semaphore-type automatic signals and the joint at the point where the rail broke was bonded with two No. 8 galvanized iron bond wires separately connected to the web of the rail, the inner bond wire being attached 1½ in. and the other 2½ in. from the ends of the joint bars, so that break was within the points of attachment of the bond wires to the rails. Following the initial failure at the transverse fissure, the rail broke into a number of pieces. Nine pieces were found, and one section 45 in. long is still unlocated. An accompanying sketch shows the assembled portions of the broken rail.

C. McD. DAVIS
President, Atlantic Coast Line

Railroads-in-War News

M. R. S. in France Drafted Rail Men

Operating men sacrificed by home roads to help move battlefront traffic

The Military Railway Service has been able to meet the emergency created by the necessity of handling tremendous movements of men and material across France only because American railroads "sacrificed trained manpower from their own organizations" to meet this critical need, Maj. Gen. Frank S. Ross, chief of transportation in the European theater of operations, has informed John J. Pelley, president of the Association of American Railroads, in a letter expressing his thanks, and those of Brig. Gen. Clarence L. Burpee, in charge of M. R. S. operations in that theater, to the railroads of America for their significant and "symbolic" contribution.

On a Few Days' Notice—Within a "very few days" after the appeal for additional trained operating officers had been sent to Maj. Gen. Charles P. Gross, chief of the Army Transportation Corps, these officers began to arrive in Paris, said General Ross, "and a few hours thereafter shouldered their share of the terrific physical and mental burden that our railway operating officials were carrying at the time." Announcement that a number of railway operating and engineering officers had been commissioned and called immediately to active duty in France appeared in *Railway Age* of November 11, page 741.

"The first trainload of supplies moving to the front passed through Paris on September 4," General Ross wrote, "and since that day the trend of total daily tonnage has been steadily increased until it has now reached a stream of supplies which will meet the needs of the fighting men at the front. The vast volume of these supplies could be transported in no other way except by rail. We feel confident that, when history is written, the contribution of the American railroads in the form of railroad men in the Transportation Corps' Military Railway Service will be one to which you can always point with pride.

No Soft Job—"The Military Railway Service in this theater has not been conservative in thought or effort. They have operated under conditions which even the layman recognizes as extremely difficult and dangerous. They have risked life and limb to get supplies through and hospital trains back, and what is more, they have succeeded in accomplishing this mission.

"This achievement has been made possible only because the American railway corporations, individually and collectively, have sacrificed trained manpower from their own organizations to achieve this purpose, and I will be grateful to you if you will convey to them our appreciation of their efforts and our realization that they have made such contribution with no expectation of reward other than the satisfaction of doing their bit to support the American soldier who is now driving forward to victory."

In reply to General Ross' letter, Mr. Pelley stated that "it was a privilege and pleasure for the American railroads to do what they could to help in this very important situation."

"It is very gratifying to have your advice, not only as to the accomplishments of these officers, but also of the magnificent performance of your entire Transportation Corps," Mr. Pelley wrote. "The splendid work which you and your associates are doing under most trying and difficult conditions is a source of pride to the men and women of the American railroads, and, in their behalf, I wish to extend our congratulations on your accomplishments and our best wishes for the future."

Permits Equipment Builders to Exceed Schedules

Builders of railroad cars and locomotives may produce such equipment in advance of their production schedules, after giving the War Production Board notice that conditions permit manufacture ahead of schedules, the W. P. B. announced November 25. The authorization appeared in amendments to Orders 1-97 and L-97a effective on that date.

Subject to the condition that sequence of production established in schedules must be maintained, the manufacturer may proceed with such advance production provided it does not interfere with other schedules, it was explained, unless he is otherwise directed, in writing, by the W. P. B.

Bronze Star Medal for Former Southern Railroader

Lt. Col. Miles G. Stevens, of Somerset, Ky., formerly a master mechanic of the Southern, and commanding officer of a Transportation Corps railway shop battalion since March, 1943, has received the Bronze Star Medal for "meritorious service in connection with military operations during the period from December 1943 to July 1944," it is reported by Headquarters, European Theater of Operations.

Colonel Stevens and his men have assembled flat cars, cabooses, box cars, gondolas and tank cars. Originally sponsored by the Norfolk & Western, this battalion, it is said, began the job with a makeshift gantry crane and a few hand tools, and then expanded until they were turning out 12 flat cars and 20 gondolas daily.

Tank Car Supply Extremely Critical

Director Johnson lays present emergency to major changes in petroleum situation

Asserting that every available tank car on American railroads is now in use, and that the country is faced at this time with its "most acute shortage of tank cars," Col. J. Monroe Johnson, director of the Office of Defense Transportation, has called upon railroads, government agencies, and heads of industries to co-operate in order that "the most available and efficient form of transportation be used from every shipping point, and every effort made to release tank cars so that they can be used on long hauls where they are most effective," utilizing other forms of transportation for shorter hauls.

The present emergency is the result of major changes in the petroleum situation due to the withdrawal of tankers and greater increased military demands for petroleum and its products, according to the O. D. T. director. Particularly urging the War and Navy departments and the procurement office of the Treasury department to endeavor to secure a more efficient use of the tank cars in service and faster turnaround time, he pointed out that there has developed a tendency in the armed services and in the petroleum industry "to reduce transportation costs by utilizing lower cost facilities." However, he insisted, the time "is not opportune for this change, and every facility, regardless of comparative cost, must be utilized if we are to perform the transportation required."

Calling attention to the importance of conserving tank cars for use on long hauls where they are most effective, Colonel Johnson urged shippers to make sure no other means of transportation could be found, regardless of cost, before requesting O. D. T. permits for shipment of petroleum or its products in tank cars for distances under 200 miles. Applications for such permits will be screened more carefully than ever, he indicated.

Pointing out that the 15,000 additional tank cars that are needed cannot be obtained by new construction, he asked for the immediate installation of a 24-hour workday and 7-day workweek, if not already effective, for handling tank car shipments and deliveries, and asked those in charge of procurement of petroleum supplies to re-check sources of supply to make certain they are using the nearest available source. Rail executives were advised that "better utilization and faster movement of the existing fleet" is needed, and that tank car turnaround times, which Colonel Johnson said

have lengthened in recent months, must be speeded up.

Reinstatement of the O. D. T. requirement that shippers and carriers obtain permits from that agency for the use of tank cars for the movement of petroleum or its products for distances of 200 miles or less was announced November 25. The pertinent provisions of General Order ODT-7 Revised were relaxed on September 22, the mileage limitation being reduced at that time to 100 miles, as noted in *Railway Age* of September 30, page 519, but restoration of the 200-mile limit has become necessary as tank cars have been in greater demand, it was said.

E. H. Boykin Now Lieutenant Colonel in France

Major Edgar H. Boykin, former L. & N. railroader, and holder of the Bronze Star Medal, recently was promoted to the rank of lieutenant colonel, it has been announced by Headquarters, European Theater of Operations.

At present with the United States forces in France, Colonel Boykin, who is chief of the freight branch, Office of Chief of Transportation, has been promoted rapidly since 1942, when he arrived in the United Kingdom, as a first lieutenant. Under his supervision, cargo disposal instructions are issued to all ports of debarkation for the movement of cargo arriving in this theater.

Colonel Boykin was employed for 11 years in the freight traffic department of the Louisville & Nashville, prior to entering military service.

Two Pacific Coast Cities Ban 1945 Conventions

Director Johnson of the Office of Defense Transportation has issued a statement urging all cities to follow the lead of San Francisco and Portland, Ore., in "banning" for the duration of the war, all conventions requiring inter-city travel.

Because of a critical shortage of hotel accommodations and transportation facilities, he said, an "outright ban" on conventions in 1945 has been made effective through the co-operation of their city officers, chambers of commerce, and many hotel operators. In addition, arrangements to cancel many of the conventions scheduled for these cities for the remaining weeks of 1944 have been agreed to, he added. It was stated at the same time that the Los Angeles Chamber of Commerce had decided to "refrain from inviting" conventions to that city in 1945.

Other cities should follow the "patriotic and foresighted action" of those mentioned, Colonel Johnson said, because the nation's transportation system "cannot stand the added and unnecessary strain of transporting conventioneers." Such gatherings, he declared, "simply have no part in our plans for victory."

Gross Joins in Drive Against Southern Vacation Travel

The War Department and the President's Committee for Congested Production Areas have added their comments to Office of Defense Transportation demands that winter vacationists refrain from traveling to southern points. Major General C. P. Gross, chief of transportation, Army Service Forces, has informed O. D. T. Director J. Monroe Johnson that the requirements for the transportation of military personnel to and from southern points this winter and next spring will be very heavy.

"Not only do we expect little diminution in the amount of organized military movements and furlough travel, but the need for transportation space for soldiers returning to and from the war fronts to participate in the army's rehabilitation program is increasing at a rapid rate," General Gross said. "While this problem will be acute in many southern areas, it is particularly important that civilian winter vacationists refrain from traveling to Florida."

Corrington Gill, director of the congested areas committee, pointed out that housing and community facilities are already overtaxed "in the popular southern winter resort areas"; and a tourist coming to any such area "only adds to the existing problems and is adversely affecting the war effort."

Will Allow Service Men to Help Handle Mail and Express

Service men will be available on the same basis as in 1943 for employment by railroads in need of additional labor in handling holiday mail, express and freight through the coming Christmas season, the Office of Defense Transportation stated November 27. About 60,000 men furnished such assistance last year, it was reported.

Commanders of all Army installations have been authorized to permit soldiers as individuals to engage in whatever work at railroad stations, freight houses and terminals the carriers may offer, during the period from December 1 to January 2, 1945, and similar orders have been issued by the Navy, it was explained. Service men are to be employed only when civilians are not available to perform such extra holiday work, however, and their employment must be entirely voluntary, and undertaken when they are absent on pass or on normal off-duty periods. They will be paid by the roads employing them.

14 Santa Fe Men with Railway Grand Division in Paris

The Santa Fe-sponsored 710th railway grand division, which arrived in France August 27, has set up headquarters in the Paris area. Under the command of Lt. Col. Otto D. Grill, formerly Santa Fe division superintendent at Marceline, Mo., this group exercises administrative responsibility over the 716th, 723rd and 744th railway operating battlaions.

According to Headquarters, European Theater of Operations, in addition to Colonel Grill, there are 13 other former Santa Fe men in the officer line-up of the 710th grand division. They are: Lt. Col. L. I. Bradford (supt. of equip.); Maj. Charles W. Philhour (asst. supt.); Capt. Fred A. Boyer (m. c. b.); Capt. Everett J. Bruce (sta. mastr.); Capt. Harold J. Martin (sta. mast.); Capt. Albert F. Marth (supply off.); Capt. Winston H. Guess (asst. supt. car serv.); Capt. John H. Adain (adj.); 1st Lt. Jack Eisemann (asst. eng. br. and str.); 1st Lt. Thomas N. Eagle (asst. eng. sign.); 1st Lt. Andrew J. Willoughby (sta. mast.); 1st Lt. Robert D. Curry (asst. eng. trk.); and 1st Lt. Edward R. Mader (fuel agt.).

The 710th was activated at Fort Sam Houston, Tex., December 14, 1942. There followed an 11-week technical training course in the offices of the Northern Pacific and the Great Northern, in St. Paul, Minn. In preparation for the administrative work which they would be designated to handle as the coordinating unit for three railway operating battalions, the men were trained in the organization and mission of the Military Railway Service, in practical engineering and drafting, telegraphy code practice, office administration and Military Railway Service rules. They were stationed in a classification area for a short time in England before going to France.

Colonel Lasher Leaves Army's Traffic Control Division

Colonel E. C. R. Lasher, deputy chief of the Traffic Control Division of the Army Transportation Corps, has been transferred to New York as zone transportation officer, Second Transportation Zone. Colonel I. Sewell Morris has been named acting deputy chief of T. C. D., having been succeeded as chief of its Passenger Branch by Lieutenant Colonel Bert E. White.

W. P. B.'s Railroad Scrap Unit Terminated

Operations of the Railroad Unit of the War Production Board's Salvage Division were terminated on December 2. The unit was organized in March, 1942, by B. C. Bertram who remained as its chief throughout the period of its operation.

Shop Battalion Supply Officer Is Cited in France

Formerly an engineer for the Baltimore & Ohio, Capt. Charles M. Bainbridge, of Fairmont, W. Va., now a supply officer with a railroad shop battalion in France, has been cited for his work by Lt. Col. Miles G. Stevens, his commanding officer.

His job, which is described by Headquarters, European Theater of Operations, as a "difficult task," involves the movement of hundreds of pieces of equipment every time his unit moves.

War Food Authority Seeks More Refrigerator Cars

The War Food Administration is urging the construction of more than the 1,800 refrigerator cars scheduled for manufacture in 1945, according to the current issue of "The Agricultural Situation," published by the Bureau of Agricultural Economics of the Department of Agriculture. This position is based on that agency's estimates that demands for refrigerator cars may increase next year by 2,500 cars per month, as compared to this year, while the current demand is greater than the supply, this publication indicated.

During the October peak traffic period this year 136,000 refrigerator cars were available, it was pointed out, or 2,000 less

than the supply available in 1943. A shortage of box cars, particularly for the movement of grain in the Northwest and grain sorghums in the Southwest, also was noted, but an improvement, both quantitatively and qualitatively, in the locomotive supply was observed, as compared with the previous October.

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the office of Price Administration since November 18, and which are of interest to railways:

Allocations of Controlled Materials in 1945—W. P. B. has issued instructions to claimant agencies and industry divisions to proceed with the estimates of steel, copper and aluminum that must be allocated to war production during the first quarter of 1945. This is based upon the assumption that the war with Germany will not come to an end in time to alter the allocation program for the first quarter of next year.

Enameled Ware—One of the principal bottlenecks in the enameled ware industry is the irregular delivery from the mills of cold rolled steel, 28-gauge and heavier. Relaxation of the 60-day material inventory restriction would tide manufacturers over such later delivery periods, committee members said.

The situation in shipping containers, a predominant problem in the enameled ware industry, was described by a government representative as having improved. However, there is little possibility of increased containerboard allocations during the fourth quarter, he told the committee. Containerboard requirements for newly-permitted civilian items, such as electric irons and aluminum ware, may offset any increase in supply. The next two or three months will determine whether relaxations in container usage will be permitted, he said.

Electrical Transformers—Revision of Table 8 of General Scheduling Order M-293 so that purchasers no longer will be required to obtain authorization to buy certain type of transformers is being considered by the W. P. B. Manufacturers have reported that they are now in a position to handle orders, without W. P. B. controls, for transformers 250 KVA and larger, or smaller than 250 KVA with special features, design characteristics or accessories. W. P. B. said it proposes to retain these transformers as undesignated items on Table 8 of M-293 so that in special cases directives can be issued to govern them.

Fluorescent Lighting Fixtures—Manufacture of certain types of fluorescent lighting fixtures which has been prohibited, is now permitted when fixtures are provided with ballasts or transformers that control two or more lamp tubes. Additional types permitted are those designed for a continuous row of single tubes rated 40 and 100 watts per tube; those of 15, 20, or 30 watts each are still prohibited.

Galvanized Sheets—Requirements for galvanized sheets have reached an all-time high, but the manpower shortage does not permit production to be increased accordingly.

Hardware—No relaxation or restrictions on the use of tin in the manufacture of hardware is possible in the near future. Approximately 70 per cent of the world's tin supply normally is produced in the East Indies and the Malay Peninsula, and control over the consumption of tin will have to be retained until possession of these areas is regained by the United Nations. At present, only about 65 per cent of current U. S. requirements for primary tin are being met by ore from Bolivia and the Belgian Congo, and by reprocessing from cans and other secondary sources. No new sources for tin are known. War uses of tin are not expected to decrease after V-E Day, since bronzes, babbits, solders and other high tin alloys will be in increasing demand for maintenance and repair of Navy ships and merchant fleets.

Nickel is expected to remain in short supply due to heavy military demand. There is little probability that restrictions on nickel plating for hardware can be relaxed in the immediate future.

Lacquers of qualities previously used are not generally available for coating hardware because military requirements continue high.

The overall supply situation for malleable iron is critical. Civilian requirements far exceed the quantities available.

Limitation on Post-War Orders—W. P. B. has further modified its position on the placing of orders for delivery of materials or commodities after the defeat of Germany. This is included in an amendment to Interpretation 11 to PR-1. This provides that a manufacturer may not schedule such orders for production or place material in production to fill such orders until after the applicable W. P. B. restriction is removed. He may order material, but since PR-1 would prevent his receiving it, the order must call for delivery at a future time when the material can be received. Also, if he is ordering a material which is itself subject to a restriction on placing or accepting of orders, that purchase order must as well be conditioned on the removal of the restriction.

Metal Doors, Frames and Shutters—Provisions controlling the manufacture and sale of metal doors, metal door frames and metal shutters have been removed through the revocation of Order L-142, only a small increase in production is expected as control will still be exercised through quarterly C. M. P. allotments of materials, W. P. B. said. Demand for these products is limited by restrictions of the construction order, L-41. An estimated 41,000 tons of carbon steel or an equivalent amount of aluminum will be used for metal doors, frames and shutters in 1945, as compared with 30,000 tons of steel allotted to the industry in 1944, W. P. B. said.

Parts for Diesel Locomotives—Transportation system operators may no longer use the blanket authorization provided under P-142, the railroad maintenance and repair order, to purchase certain repair parts for Diesel-electric locomotives of 660 horsepower, or larger, W. P. B. announced recently. To obtain Diesel engines, complete truck assemblies, propulsion motors, and generators for repair or reconstruction, operators must apply for a rating on Form W. P. B. 541, W. P. B. said.

Direction 6 to P-142, issued November 14, will prevent the accumulation of critical Diesel-electric locomotive parts in operators' stocks and will assure more equitable distribution of these items, W. P. B. explained.

Plumbing Fixture Fittings—More durable float rods, flush connections for low tanks; flush valves for low tanks; sink, tub and lavatory plugs and strainers; tank floats; single faucets; combination faucets; shower valves; flushometers; shower and urinal strainers; tubular goods (with the exception of shower rods and fixture traps; and lavatory, bath and closet supply pipes); closet and urinal spuds; shower heads and arms; fixture stops; and cleanout plugs for cast iron soil pipe and fixture traps, have been provided for by the amendment of Schedule IV to Order L-42, and copper order, M-9-c, to permit the use of copper for these supplies.

Chromium, nickel and cadmium for plating these plumbing fittings are still prohibited, however, because of the scarcity of these materials.

Railway Scales—All simplification restrictions on railway track scales, portable beam scales and certain other types of scales have been eliminated. Production controls also have been amended to permit an increase or decrease in production as changing conditions require.

The amended Order L-190 also increases a manufacturer's permitted inventory of industrial type scales from 1/12th to 1/10th of the scales billed by him in 1941. The heavy demand from industry for these scales, which include the many varieties that are essential to the maintenance of production lines in every industry, was responsible for this increase.

Steel Drums—Revocation of Limitation Order, L-197, which restricts the use of steel drums and pails, was recommended by industry representatives recently. Steel supply is believed to be adequate now for free production, but the continuing manpower shortage may limit the supply.

Prices

Hardwood Flooring—An increase of two per cent in the maximum prices for maple, birch and beech flooring produced throughout the United States except in the Southern, South Central and Appalachian hardwood lumber regions has been provided by Amendment No. 6 to MPR 432. Effective November 23, the increase was authorized after analysis of cost and profit and loss data submitted by producers who had petitioned for individual adjustments of maximum prices for these products. The higher prices are authorized at the manufacturers' level, and may be passed on in sales at all levels of distribution.

Representative new prices compare with the old as follows: Northern Hardwood region hard maple flooring, tongued and grooved, and end-matched, 25/32 in. by 2¼ in.

	New Price	Old Price
First grade—lengths 2 ft. to 16 ft.	$105.00	$103.00
Second grade—lengths 1½ ft. to 16 ft.	99.50	97.50
Third grade—lengths 1 ft. to 16 ft.	82.00	80.50

Treated Poles and Piles—Flat additions of three-fourths of a cent per lineal foot for treated poles and piling of Eastern species, and 1½ cents for Western species, that pressure-treating plants may add to maximum prices are provided by Amendment No. 2 to MPR 491, effective November 25.

Explaining the action, O. P. A. said that when a price regulation for pressure-treated forest products was drawn in November, 1943, producers of untreated poles and piling were permitted to add to ceiling prices certain additions ranging from one-half to three cents per lineal foot on deliveries of items in specified length as against random length deliveries. Plants pressure-treating poles and piling were permitted by interpretation of the regulation to pass these additions on to buyers. In July of this year, however, pressure-treating plants were denied permission to pass the additions on to their customers.

Pressure-treating plants shortly thereafter told O. P. A. they could not absorb the additions for specified lengths they paid for untreated poles. Adjustable pricing was authorized September 4, and on September 26, O. P. A. national office representatives held a meeting with the O. P. A. Wood Preserving Industry Advisory Committee in St. Louis, Mo.

Vitrified Clay Products—Manufacturers of vitrified clay sewer pipe and allied products in eight southern states have been granted an increase in maximum prices of approximately 15 per cent, based on estimated annual dollar sales volume, by Amendment 61 to Order A-1 under MPR-188 and Amendment 9 to MPR-206, both effective November 18. Distributors and dealers are authorized to increase their prices by the actual increase in cost resulting to them from the adjusted manufacturers' prices. The states covered are: North and South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi, and that part of Louisiana east of the Mississippi River.

Vitrified clay sewer pipe and allied products include sewer pipe and fittings, flue lining, septic tanks, liner plates, underdrains, segment blocks, and other minor items. The new increase is determined to be the maximum amount required to return to this segment of the industry earnings equal to the average annual aggregate dollar profits during a normal pre-war period, 1936 to 1939, O. P. A. said.

The seven plants in the Southern area which produce these construction commodities generally do not manufacture other products. However, a few companies manufacture, as a minor part of their total production, other clay products such as refractory brick, common brick and drain tile.

In another amendment, also effective November 18, prices are established for a new commodity in the Southern area—heavy duty, extra strength clay sewer pipe. The prices, which have been established in consultation with the industry, will reflect for each size of the extra strength pipe, a sales realization per ton comparable to that realized on standard strength pipe. Discounts from established list prices for different classes of purchasers, set forth for standard strength pipe, will apply to each diameter size of extra strength pipe.

GENERAL NEWS

George M. Barnard Approved for I.C.C.

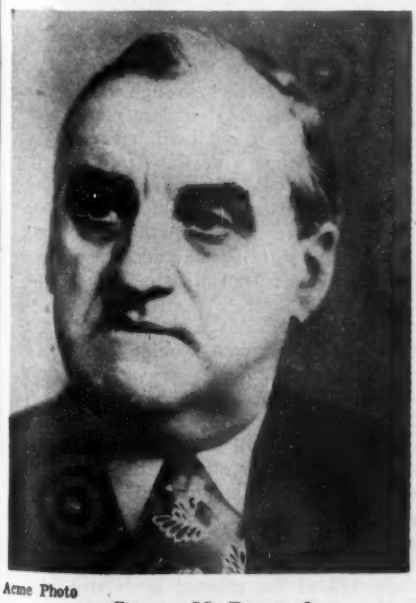
Senate confirms appointment of Eastman successor after series of delays

The Senate on November 29 confirmed President Roosevelt's appointment of Commissioner George M. Barnard of the Indiana Public Service Commission as a member of the Interstate Commerce Commission, succeeding the late Joseph B. Eastman for a term ending December 31, 1950. The nomination had been reported favorably on the previous day from the committee on interstate commerce by Chairman Wheeler.

Mr. Barnard's appointment went to the Senate on May 31, but action was delayed at that time because injuries received by the appointee in an automobile accident prevented his coming to Washington for a meeting with the committee. Then came the extended Congressional recesses for the periods of the national political conventions and election, the nomination being kept alive meanwhile by special Senate acts holding such matters in status quo over each recess period. Mr. Barnard appeared before the committee on November 28, and his nomination was reported shortly thereafter—by unanimous vote of the committee, Chairman Wheeler said.

Mr. Barnard is a Republican, the present line-up of the commission being such that the President was required to name someone who was not a Democrat. He was born in 1881 at Newcastle, Ind., and received his law degree at the University of Michigan in 1903. He then entered the practice of law at Newcastle, continuing there until 1921, but meanwhile serving from 1906 until 1910 as prosecuting attorney of Henry County, Ind., and from 1910 until 1914 as mayor of Newcastle.

Mr. Barnard was first appointed to the Indiana Public Service Commission in 1921, but he resigned a year later to resume the practice of law, this time with an Indianapolis firm whose partners included also the late Senators Samuel M. Ralston and Frederick Van Nuys. He was appointed again to the Indiana Public Service Commission in July, 1941, and reappointed in 1943.



Acme Photo

George M. Barnard

N. Y. R. R. Club to Have Two Dinners

To avoid congestion at the annual dinner of the New York Railroad Club, scheduled for the Hotel Commodore on the evening of December 7, it has been decided to divide the affair into two simultaneous dinners, one of them at the Hotel Biltmore in addition to the one at the Commodore.

The purpose of the occasion being to provide war-busy railroaders and suppliers of the immediate territory with an opportunity for constructive personal contacts which they cannot make during business hours—those in charge have made the revision in order to facilitate movement, impossible when congestion is considerable.

The identical program of entertainment will be provided to the diners at each hotel.

U. S. Chamber Favors Relief on Deferred Maintenance

Directors of the Chamber of Commerce of the United States have approved a report of the Transportation and Communication Department Committee which recommends legislation to permit regulated transportation and communication agencies to set up tax-exempt deferred maintenance reserves for use within five years after the war and subject to supervision by the proper regulatory body.

The stated purpose of the recommendation is to create conditions under which those agencies, in the post-war period, may "meet public demands for efficient, safe and economical service, and play their part in the job-building program for post-war economic rehabilitation and development."

No Objection to R. R. Operation of Planes

Arbitrarily banning carriers from air is decried in scholarly analysis

Applications by railroads, steamship companies, and motor carriers for permission to engage in air transportation should be considered on their merits and not rejected arbitrarily on the basis of a general legal prohibition. Such is the conclusion reached in a monograph entitled "Surface Carrier Participation in Air Transportation," by William L. Grossman, assistant professor of Transportation in the New York University School of Commerce, Accounts, and Finance. The 97-page study consists of a critical analysis of all the various arguments which have been advanced for and against such participation.

It is pointed out that although the Civil Aeronautics Act "does not forbid a surface carrier to engage in air transportation, its provisions as interpreted place far greater obstacles in the way of a surface carrier applicant (or an applicant affiliated with a surface carrier) than they place in the way of an independent applicant." Not all applications of surface carriers for authority to engage in air transportation are desirable in the public interest, of course, but, where rejection is called for, it should be based on the public interest and not in automatic response to a general prohibition of such air operations where not connected with the applicant's operations on the surface.

The study, accordingly, recommends that Congress repeal the special restrictions upon the approval of such proposals, so that the Civil Aeronautics Board may be free to grant any surface carrier application which it finds to be in the public interest. "The supposition," the report says, "that railroad executives wear horns and that air line executives wear wings is patently absurd."

"Doubtless the net balance of advantage or disadvantage will vary greatly from proposal to proposal," the monograph says. "In one case, the surface carrier will be 'air-minded' and progressive, the combination will make possible great economies through avoidance of duplication, and so on. In another case, the purpose and probable effect of the proposed combination will be to retard the development of air transportation, no substantial economies will be achieved, and so on.

"The obvious goal of sound regulation with regard to the instant problem must be to separate the chaff from the wheat, that is, to approve the desirable and to reject the undesirable combinations. However, under the Civil Aeronautics Act of 1938, as inter-

Lift Lid on Planes on Domestic Routes

Army will release transports to airlines, increasing their capacity

Domestic airlines have been placed in a position to enlarge their service through the removal by the President of the limitation, invoked May 6, 1942, on the number of planes they may operate and the simultaneous announcement by the War Department that the Army Air Forces are ready to make transport aircraft which have been declared in excess of war needs available to the airlines through established surplus disposal channels.

When the 1942 limitation was ordered, 324 planes were being operated in scheduled domestic air transport service, the War Department pointed out. The President's order resulted in the sale or lease of 158 of these to the Army, reducing the number available for commercial operations to 166 planes. Under an amendment to the order effective April 29, 1944, the limitation on the number of commercial planes in use was lifted to 300, on the Army's recommendation, and many of the planes which the Army had taken over were returned to the airlines, or others of similar types were released in their place. As a result, the total domestic airline fleet already consists of 300 planes, but the total seating capacity available is in excess of that provided by the 324 planes in service in May, 1942.

Predicts Traffic Gains.—The return to the airlines of these planes, together with the high load factors with which they have been operated, will enable the domestic air carriers to show gains of 22.5 per cent in revenue passenger-miles, 24.7 per cent in mail pound-miles, and 7.2 per cent in express pound-miles flown during this year, as compared to 1943, according to estimates offered the annual meeting in Washington, D. C., November 29, of the Air Transport Association of America by its president, Col. Edgar S. Gorrell. Revenue passenger-miles are expected to exceed two billion, as compared to 1943's 1,632,452,433. Gross revenues are expected to exceed $150 million, as compared to $123,368,870 in 1943. Despite the increase in the number of planes in service, the load factor is running above 90 per cent this year, Col. Gorrell said, as compared to 88.01 per cent last year and 72.21 per cent in 1942. Planes are in flight, on the average, 11 hours daily, making a national average of 1,825 miles per plane per day.

In spite of the Army's preparations to dispose of additional transport planes to the domestic carriers, these operators already have placed orders with the manufacturers for more than $150 million in new equipment, according to Col. Gorrell.

No Change in Travel Priorities.—Removal of the limitation on domestic air operations was advised by the Army, Post Office Department, and Civil Aeronautics Board to permit expansion of services of "direct and indirect importance in the war effort," the War Department announcement said. It went on to point out that no change had been made in the air travel priorities system, although the release of additional planes from military service, as military needs allow, will permit the commercial lines to handle more passengers, mail and express.

"If there is no drastic change in the strategic situation in the near future," the War Department explained, "the Army Air Forces estimates that certain transport aircraft, largely of models and types non-standard to military usage, will be available in the next few months through established channels for release to the domestic air carriers." The "established channels" run from the Reconstruction Finance Corporation or the Foreign Economic Administration, to which surplus planes are released by the Army, and their disposition is governed by the provisions of the Surplus Property Act.

What Employees Think

The predominant opinion of employees of the country's manufacturing industry is that there will be a lot of post-war unemployment; and they are looking to government—rather than to private industry—to solve this problem. Seven out of ten of these employees are union members, and most of them have confidence in their leaders; but they do not believe in the closed shop or "maintenance of membership," and they want public accounting of union finances and a secret ballot on strikes.

These views are reported by the magazine "Factory" from a survey made for it by the Opinion Research Corporation of Princeton, N. J., which has for several years made the surveys of public opinion on transportation for the A. A. R.

Freight Claim Division to Meet Next May

The Freight Claim Division of the Association of American Railroads will hold its annual meeting in the middle or latter part of May, its general committee having reached the conclusion that the present condition of the freight loss and damage account calls for the holding of a meeting of the division in 1945.

F. B. I. Arrests U. P. Waiters

The Federal Bureau of Investigation has announced the arrest of more than 100 Union Pacific dining car waiters and stewards on charges of withholding receipts for meals. According to J. Edgar Hoover, director, the alleged operation had cost the railroad an estimated $200,000 a year. The arrests were made at Los Angeles, Cal., Las Vegas, Nev., Omaha, Neb., and at other points upon train arrival. The employees, including complete crews of waiters, stewards and assistant stewards, had been withholding receipts for meals served on the "Challenger" between Omaha and Los Angeles.

Land-Grant Repealer O. K.'d by Committee

Senate group favorably reports House-approved bill with amendments

The Senate committee on interstate commerce on November 28 reported favorably to the Senate an amended version of H. R. 4184, the House-approved Boren bill for repeal of remaining provisions of the land-grant-rate law. The committee accepted the bill as amended by its subcommittee headed by Senator McFarland, Democrat of Arizona, which held hearings on the measure.

The amended version changes the House-approved provision relating to the delayed effective date of repeal, fixing such date at a time when the Interstate Commerce Commission shall have issued a proclamation stipulating that land-grant deductions since the enactment date have exceeded $68,272,770, the value placed on granted lands still held by the railroads and not used in their operations. The House bill fixed the effective date of repeal 90 days after the enactment date.

Another change is the addition of new provisions earmarking the $68,272,770 as a "Veterans' Farms Fund" for the purchase and improvement of lands for subdivision into farms for sale to veterans of the present war. Left undisturbed was that provision of the House bill which stipulates that, in the exercise of its power to prescribe just and reasonable rates, the I. C. C. "shall give due consideration to the increased revenues which carriers will receive as a result of the enactment of this act, so that such increased revenues will be reflected in appropriate readjustments in rates, fares, and charges to shippers."

Wheeler Voted "No."—The favorable committee action came on a 10 to 3 vote. Chairman Wheeler stated that he was one of the three voting against reporting the bill, and the other two negative votes are understood to have been cast by Senators Hill, Democrat of Alabama, and Shipstead, Republican of Minnesota. Meanwhile Chairman Wheeler said he thought the measure had a chance of getting through the Senate before adjournment. If it does not it will die with the session, and it will have to move fast to avoid such a death. After passing the Senate it would have to go back to the House, and perhaps to conference before the different versions were finally reconciled. And Congressional leaders are talking of final adjournment dates as early as December 10.

The new provisions with respect to the delayed effective date would require all carriers operating under land-grant rates, including those operating under equalization agreements, to forward to the Comptroller General copies of all bills rendered against government agencies, showing the difference between the full commercial rates and applicable land-grant rates. On the day the total of the differences so reported exceeds the total value ($68,272,770), as set forth in the bill of the granted lands still held by the carriers, the Comptroller General

would make a certification to the I. C. C. which "shall immediately" issue its proclamation making repeal effective "at midnight on the day after the date of such proclamation."

About $20 Millions Monthly.—It is also provided that transportation begun prior to the date thus fixed for repeal shall be charged at the rates in effect at the time such transportation began; and that no carrier report filed with the Comptroller General in the foregoing connection "shall be considered or construed as an admission by such carrier with respect to the lawful rate applicable to any travel or transportation performed prior to the date of enactment of this act." Testimony at the hearings to the effect that land-grant deductions were then amounting to about $20,000,000 a month would indicate that the effective date of repeal under the Senate version would be reached between three and four months after the enactment date.

The amendment setting up the "Veterans' Farms Fund" would not affect the railroads, since it provides for disposal of the $68,272,770 after repeal has been finally effected. That total value of the granted lands still held by the carriers is broken down by states in which such lands are located, the state totals ranging from Montana's $19,209,090 to Wisconsin's $3,300; and the Secretary of the Interior, as administrator of the fund, would be directed to spend in each state the amount thus shown "at least up to $5,000,000." After that is done, the balance of the fund would be "equitably apportioned by the Secretary for expenditure in other reclamation states."

There would be other instructions to the Secretary as to the administration of the fund, including provisions requiring that the terms he makes for purchase of farms by veterans will permit payment of the purchase price over a period of 20 years without interest. And "no amount shall be deducted or withheld from any payment due to any veteran under any law administered by the Veterans' Administration for the purpose of protecting the United States against loss in connection with any sale of land under this act."

The favorable report to the Senate was made by Senator McFarland. The report explained briefly the Senote version, pointing out that the $68,272,770 set aside as a "Veterans' Farms Fund" would not be actually appropriated by the bill, but would be "held for appropriation by Congress from time to time for the purposes hereinafter set forth." To set out the history and background of the land-grant rates, the Senate committee incorporated in its report the House committee on interstate and foreign commerce's report, which was reviewed in the *Railway Age* of May 6, page 862.

Wood Tank Barges Still in Use

After almost a year's test performance, wooden tank barges built on government order during the period of critical shortage of steel have been found "adequate for the service in which they are engaged," that is, the movement of Naval special fuel oil eastward from Texas refineries to points reached through the Gulf Intracoastal Canal, according to an Office of Defense Transportation statement.

The O. D. T. Waterways Transport Department has 84 such barges in service, each with a capacity of 5,200 barrels of residual oil. They are allocated to and operated by private towing companies, and will remain in that service, it was indicated, "as long as required." Working with these barges are 21 tugboats.

The barges were unsatisfactory when first put in service, particularly because of water leaks through the seams which resulted in emulsification of the oil, but alterations enabled them to be put back in service in February of this year, it was explained. In addtion to this fleet, the Army has about 100 wooden tank barges, the O. D. T. pointed out, these being used mainly for lighterage.

Vehicle-Renting Affiliate of U. S. Trucking Is Carrier

Reporting on further hearing in the No. MC-20314 proceeding, the Interstate Commerce Commission, Division 5, has ruled that John J. Casale Inc.'s operations in connection with the furnishing of vehicles and drivers to shippers makes Casale a contract carrier by motor vehicle. The report also found that Casale is controlled by the same "person" (Pittston Company, an Alleghany Corporation subsidiary) which controls the United States Trucking Corporation, a motor common carrier; and thus the commission has reopened the proceeding for still further hearing on the question of whether the "dual operations" by Pittston would be consistent with the public interest.

Casale has been operating since November, 1941, under a previous commission determination which had the effect of finding it to be neither a common nor contract carrier, i. e., the commission at that time allowed to become effective an examiner's report which recommended dismissal of the Casale application. Thereafter, however, it reopened the case upon its own motion and looked again at Casale's operations.

These formerly included a small for-hire operation, which was discontinued entirely by the end of 1939, the vehicle-renting operations meanwhile expanding. The renting operations are of two kinds—those where only the vehicle is supplied and those where both vehicles and drivers are supplied. The commission measured both on the basis of various tests established in precedent-setting decisions on the distinction between private carriage and carriage for hire. Generally, those decisions have found that the distinction "rests on a determination of the one who has the right to control, direct, and dominate the performance of the service." In other words, if the shipper renting the vehicles controls their operations, the transportation involved is private carriage; if the owner of the rented vehicles retains control over their operations, he is engaged in providing transportation for hire.

Driver Is Determinant.—As noted above, the commission's conclusion is that Casale is operating as a contract carrier to the extent that it furnishes trucks with drivers to shippers; and it is not a carrier for hire in instances where only the vehicles are furnished. In reaching these conclusions, the commission went on to express its desire "to make it clear, however, that the owner of a truck operating as a private carrier or a bona fide lessee of a truck operating such truck as a private carrier needs no authority from us."

"We have no desire to interfere with such operations," the report continued. "Here, however, we must ascertain whether bona fide leases have in fact been made and whether the lessee is a bona fide private carrier. The facts fail to support an affirmative finding in this respect, to the extent that applicant furnishes vehicles with drivers to the shippers in the manner prescribed."

"Fortune" Says RRs Should Spend $5-$10 Billions

In its December issue, the publication "Fortune" examines in detail the expenditures for "self-liquidating" capital improvements which the Rock Island could profitably make if it had reasonable assurance of a moderately prosperous volume of traffic and revenues. Such expenditures are estimated at $95 millions. To convert the Rock Island into a "super-railroad" (defined as one which can move 5,000-ton freight trains at an overall average of 40 m. p. h. and passenger trains at 75 m. p. h., including stops), would entail an outlay of $210 millions.

Projecting these compilations for the Rock Island to the railroads as a whole, "Fortune" calculates that the railroad industry could spend, at a minimum, $5 billions on "self-liquidating" improvements—while $10 billions at least would be needed to make "super-railroads" of "even the better lines."

"Fortune" concludes that "William Benton and Paul Hoffman and all other prophets of a durable and expanding private enterprise are challenged to get busy and start working on the railroads"—that is, to remove the obstacles which tend to hinder the carriers from making outlays of such magnitude.

N. & W. Better Service Clubs Sponsor Fifth Broadcast

The fifth in a series of broadcasts to 23,000 Norfolk & Western employees, meeting by radio in five states and over 21 stations, occurred November 20, under the sponsorship of the N. & W. Better Service Clubs.

This broadcast emphasized the scientific research and improvements which have enabled the N. & W. to deal with the present record traffic load, and to provide better and safer working conditions for the road's employees, who are located throughout Virginia, West Virginia, North Carolina, Maryland and Tennessee.

A highlight of the program was a visit to the railway's dynamometer car. There was a visit also to the physical laboratory at Roanoke, where everything from nails to structural steel is tested; to the chemical

laboratory; and to the offices of the mechanical engineer, of the general superintendent of transportation, and of President W. J. Jenks. Interviews and narration were conducted by Tom Slater, director of special events for the Mutual Broadcasting System.

N. & W. men interviewed were: K. V. Conrad, general superintendent of transportation; H. W. Reynolds, mechanical engineer; H. W. Coddington, research and test engineer; R. M. Pilcher, mechanical inspector; C. L. Crockett, chemist; G. E. Baumgardner, assistant research engineer, and J. J. Minahan, special representative of superintendent transportation.

X-Ray Exposure Control

Of interest to the medical departments and to those concerned with the examination of welds, castings and other sections, is an x-ray exposure control which was demonstrated by the Westinghouse Electric & Manufacturing Co. in New York on November 28.

The device is used in connection with the fluorescent screen type of x-ray machine which reproduces the x-ray image on small film, usually 35 mm. A photoelectric cell is exposed to the fluorescent screen during the time the exposure is made on the recording film. The output of the cell charges a condenser to a predetermined value which corresponds to correct exposure of the film, at which point the x-ray tube is cut off. In this manner the proper exposure is always assured, although there may be wide variations in the density of the material being examined. It has been proposed that this type of machine be used to examine the chest cavities of all people in the United States for the purpose of discovering the presence of tuberculosis.

Federal-Aid Airport Plan

A "national airport plan," calling for the expenditure of $1,251,567,945 and the establishment of 3,050 new airfields and the "improvement" of 1,625 already in existence, was submitted to Congress November 28. The plan was prepared by the Civil Aeronautics Administration in response to a House resolution, introduced by Chairman Lea of the committee on interstate and foreign commerce, and passed June 23.

The cost figures set forth in the plan would cover land purchase, clearing, grading, paving, lighting and radio facilities, and buildings other than hangars. A system of federal aid was proposed to finance the construction over a period of five to ten years, with provision for matching of federal funds by the states. An immediate appropriation of $53 million to cover surveys and other preparatory work was suggested.

In general, the precedent set in federal aid highway legislation has been recommended as the basis for matching funds by states, establishment of uniform standards of location and development, and state or other public control. Certain state legislative jurisdictional measures would be required, and states participating would not be permitted to use for any purpose other than aviation any part of special taxes on aviation facilities, fuel, operations or businesses. Government planes would use all "federal-aid" airports without charge, except for actual damage caused to airport property. The plan was based on C. A. A. estimates that there are now about 25,000 civilian aircraft in the United States, and that within ten years after the war ends there will be 400,000.

Freight Car Loading

Loadings of revenue freight for the week ended November 25, 1944, totaled 768,730 cars, the Association of American Railroads announced on November 30. This was a decrease of 95,643 cars, or 11.1 per cent below the preceding week, a decrease of 51,102 cars, or 6.2 per cent below the corresponding period of last year, and an increase of 25,266 cars, or 3.4 per cent, for the comparable 1942 week.

Loading of revenue freight for the week ended November 18 totaled 864,373 cars, and the summary for that week, as compiled by Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, November 18

District	1944	1943	1942
Eastern	161,506	167,397	152,195
Allegheny	189,669	193,776	175,566
Pocahontas	55,228	59,136	54,026
Southern	129,970	126,605	125,591
Northwestern ..	107,975	115,121	120,309
Central Western	141,199	139,229	130,648
Southwestern ..	78,826	81,023	78,427
Total Western Districts	328,000	335,373	329,384
Total All Roads	864,373	882,287	836,762
Commodities			
Grain and grain products	52,035	55,055	45,758
Live stock	24,317	22,397	19,706
Coal	175,567	188,273	167,436
Coke	14,143	15,218	14,475
Forest products.	41,457	45,883	42,197
Ore	40,025	49,070	58,411
Merchandise l.c.l.	108,829	106,346	91,562
Miscellaneous ..	408,000	400,045	397,217
November 18 ..	864,373	882,287	836,762
November 11 ..	839,489	847,972	826,695
November 4 ...	893,333	754,739	829,663
October 28	916,446	883,727	890,560
October 21	905,941	905,419	903,262
Cumulative Total, 47 Weeks ...	39,617,107	38,511,887	39,244,553

In Canada.—Carloadings for the week ended November 18 totaled 77,433 as compared with 74,835 for the previous week and 74,070 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
Nov. 18, 1944 ..	77,433	40,005
Nov. 11, 1944 ..	74,835	38,468
Nov. 4, 1944 ..	73,267	40,765
Nov. 20, 1943 ..	74,070	40,357
Cumulative Totals for Canada		
Nov. 18, 1944 ..	3,253,034	1,770,333
Nov. 20, 1943 ..	3,067,308	1,841,988
Nov. 21, 1942 ..	3,007,188	1,565,492

C. & O. "Angels" New Public Forum Radio Series

Without fan-fare or commercials, and in its role as backer, attempting only to render a public service, the Chesapeake & Ohio is now sponsoring a new weekly forum series, entitled "Let's Face the Issue," which is being heard over 200 stations of the Mutual network each Sunday from 5-5:30 p. m., Eastern War Time.

Dedicated to the clarification of basic public issues, over the largest network ever assembled for a forum, the program has the further distinction of being endorsed by the American Bar Association. This marks the first time this organization has co-operated in the presentation of a radio program. Each week there are four prominent guest participants, two of them noted members of the A. B. A., who act as counsel for the two other guests, each of whom represents different viewpoints on the issues under discussion.

Permanent moderator is Leland Rex Robinson, economist, educator and author. The first half of the program is a round-table between Mr. Robinson and the non-bar members, and in the second half there occurs the cross-examination of the first two guests and the presentation of the case by the two visiting attorneys. The listening audience acts as a jury.

Sherman H. Dryer, identified with the University of Chicago Round Table, is managing the new program. The premiere broadcast, discussing "What Should Be Done with Government-Owned War plants after Victory," was heard November 26.

Liberty Ship F. E. Williamson

A liberty ship being built at the Panama City, Fla., yards of the J. A. Jones Construction Company will be named the Frederick E. Williamson in honor of the late president of the New York Central, the United States Maritime Commission announced this week.

Merger Accounting Inquiry Set

On its own motion, Division 1 of the Interstate Commerce Commission has instituted an investigation to determine the proper accounting to be performed by the Kansas City Southern in connection with the merger of the Texarkana & Fort Smith with that company, naming the K. C. S. as respondent in the proceeding. A hearing has been set for January 16, 1945, at Washington, D. C.

M. R. S. Recognition Accorded Baldwin Locomotive

When Locomotive No. 70,000 left the Baldwin Locomotive Works December 4, 1943, marking a "milestone in Baldwin history," there was no celebration, wrote President Ralph Kelly recently. Instead, he said, the locomotive was shipped to the fighting front, "unheralded and unsung." "Not destined to be forgotten," however, Baldwin since has been rewarded with photographs of Locomotive 70,000 and the shop force in Italy, as well as letters from both Brig. Gen. Carl R. Gray, Jr., Director General, Military Railway Service, and Lt. Col. T. P. Crymes, commanding the 715th Railway Operating Battalion.

Director General Gray, reporting from his headquarters on the reliability of such locomotives, emphasized the "great dependence we Americans put on them. If it hadn't been for them," he added, "we would not have been capable of doing the job as we have been able to accomplish it."

Colonel Crymes wrote: "Recently one of our boiler makers completing a job discovered the engine he was working on was the same engine shown in the March 4 issue of the *Railway Age*, the 70,000th engine constructed by your company.

"I thought it of interest to you to know

that this engine now performs a highly important service for the army. It is one of a large pool of similar locomotives being used in Italy in the mission of transporting troops, materiel and supplies from ports of debarkation to final destination. In this service we use American Diesels, 2-8-0 steam locomotives, same as your Number 70,000, Italian steam locomotives and, in a portion of a rear section, electric locomotives. The American steam locomotive has proven most dependable and satisfactory of all types of power in use. Up to the present time they have been manned exclusively by American railway soldiers, who take real pride in the operation.

"Due to difficulty in securing coal we are converting all U. S. A. engines to oil. This is done by American shop forces located in several terminal points. Conversion has been completed on a large number of locomotives and has proven entirely satisfactory. . . . It also might be of interest to know that only 72 hours elapses from the time the engine enters the shop as a coal burner and it is again in service as an oil burner."

New W. P. B. Transport Head

The War Production Board has announced the appointment of David J. Holmes as chief of the transportation branch of the Division of Transportation and Storage, succeeding L. L. Adams, whose appointment as associate director of the Division of Rates of the Office of Defense Transportation was noted in *Railway Age* of November 11, page 732.

Mr. Holmes joined the W. P. B. staff in 1942, and at the time of his new appointment was chief of the traffic section of the transportation branch. He was formerly in traffic management work at Elizabeth, N. J. He is succeeded as chief of the traffic section by A. S. Dolch, who lately was associated with the now-defunct Board of Investigation and Research as a railroad specialist, after having been traffic manager of the Chicago, Attica & Southern.

Pennsylvania Announces Steam Turbine Locomotive

The Pennsylvania formally announced the completion of a coal-burning steam locomotive powered by a turbine in place of the customary cylinders, pistons, and driving rods, on Tuesday, November 28, at which time the locomotive was available for inspection by a party of press representatives at Philadelphia, Pa. The locomotive, a 6-8-6 type, was designed and built by the Baldwin Locomotive Works and the Westinghouse Electric & Manufacturing Co. in collaboration with the Pennsylvania.

Two turbines are mounted transversely between the No. 2 and No. 3 pairs of driving wheels, both of which are quill-driven through reduction gearing. The main turbine for forward motion, on the right-hand side, is 3 ft. 9 in. in diameter and is always in gear. The smaller, backward-motion turbine, mounted on the left side, is brought into operation by engaging a clutch. The horsepower rating of the main turbine is 6,500 at 9,000 r.p.m. and is designed to develop a maximum of 6,900 shaft horsepower.

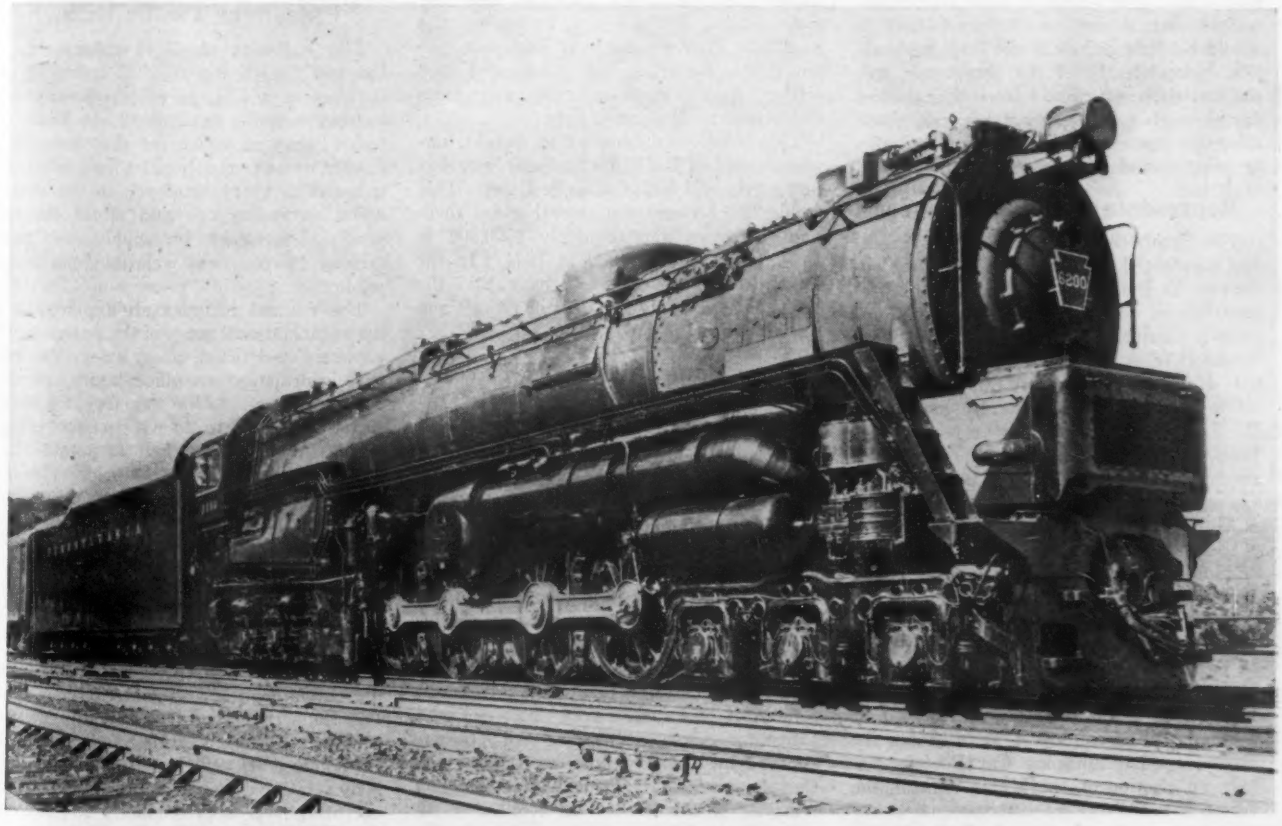
The operation of the locomotive, both in forward and backward motion, is controlled by the movement of a single lever. This operates through specially designed pneumatic control apparatus which automatically interlocks the reversing sequence so that the locomotive cannot be reversed until it has come to rest and steam cannot be admitted to the reverse turbine until the clutch is in mesh.

The total engine weight is 582,700 lb., of which 260,000 lb. are on the drivers. The driving wheels are 68 in. in diameter and the boiler pressure, 310 lb. per sq. in. The tender carries 37½ tons of coal and 18,000 gallons of water.

Would Expand Waterways

The Mississippi Valley Association, at its annual meeting at St. Louis, Mo., on November 27-29, adopted unanimously a resolution offered by Governor Sharpe of South Dakota urging the Senate to pass immediately the House flood control bill and recommending acceptance of the coordinated plan for the Missouri basin agreed upon by the Army engineers and the Reclamation Bureau. H. J. Schroeder of Moline, Ill., made a plea for the development of the Hennepin canal so that it will connect the Mississippi river with the Illinois river between Rock Island and Bureau. He said the canal would save 400 mi. in moving freight between Chicago and Minneapolis, Minn.

Vice-Admiral Land, chairman of the



Pennsylvania Direct-Drive Steam-Turbine Locomotive, Designed and Built by the Baldwin Locomotive Works and the Westinghouse Electric & Manufacturing Co., in Collaboration with the Railroad

Maritime Commission, told the Association at its annual dinner that after the war the United States will be able to use 15 to 20 million deadweight tons of its 50 million tons of war-built shipping. He placed the needs of domestic commerce at 3½ million tons for the Great Lakes, 2½ million for the rivers, 3,800,000 tons for coastal and intercoastal shipping and 7½ million tons for foreign shipping.

Suggests a Mechanical Lock on Switch Points

An investigation conducted under the supervision of Chairman Patterson has led to an Interstate Commerce Commission finding that a freight train derailment October 9 at Laden, Ky., on the Louisville & Nashville line between Harlan, Ky., and Lynch, was caused by a defective hand-throw switch. The defect was a break in the threaded end of the eye-bolt by which the rod connection with the switch points was joined to the spindle of the switch, and could not be detected by visual observation because the fracture was in the part extending into the spindle.

As a result of the break, the report indicated, the switch points were midway between opened and closed positions as the train approached the facing point switch, although the switch operating lever was locked in position for main track movement and the target displayed green. Two employees were killed and one injured, and the engine and 18 cars were derailed and considerably damaged.

In commenting on the circumstances of the accident, the report said: "If this switch had been equipped with a mechanical locking device so designed that it would hold the points in the intended position independently of the connecting rod, the switch points would have been locked for through movement on the main track after the connection was broken, and this accident would have been prevented."

Representation of Employees

The Brotherhood of Railroad Trainmen has supplanted the Order of Railway Conductors as the Railway Labor Act representative of road conductors on the Colorado & Southern, according to results of a recent election which have been certified by the National Mediation Board. Meanwhile the O. R. C. successfully met B. of R. T. challenges in two other recent elections, retaining its right to represent road conductors on the Chicago, Burlington & Quincy, and on the San Antonio, Uvalde & Gulf.

Clerical, office, station, and storehouse employees of the Chicago, Aurora & Elgin, some of whom had been represented by the Amalgamated Association of Street, Electric Railway and Motor Coach Employees of America, have now chosen the Brotherhood of Railway Clerks; while train porters on the Alton, formerly represented by a committee of employees, have chosen the Brotherhood of Sleeping Car Porters.

In an election on the Maine Central, the Sheet Metal Workers International Association, operating through the Railway Employees Department, American Federation of Labor, retained its right to represent sheet metal workers, their helpers, and apprentices, winning over the challenging Brotherhood of Railroad Shop Crafts of America. Likewise did the National Council of Railway Patrolmen's Unions, A. F. of L., meet a challenge from the Brotherhood of Railway Police and Watchmen's Union of America and retain its right to represent patrolmen and policemen in the Cincinnati Union Terminal Company's Police Department. On the St. Louis-San Francisco, the International Brotherhood of Electrical Workers, operating through the Railway Employees Department, A. F. of L. has extended its coverage of electrical workers to include linemen, formerly represented by a system committee.

Old "Mullet Line" Rejuvenated

On November 29, state, Navy, Marine and railway officers inspected the refurbished, state-owned Atlantic & North Carolina upon which $1,500,000 has been spent for rehabilitation. After a breakfast given by the Goldsboro, N. C., Chamber of Commerce, approximately 80 guests boarded a special train and traveled the entire 95 miles of the railway to Morehead City, N. C., stopping en route at the Cherry Point Marine base. The inspection signalized the near-completion of a $1,500,000 project which has enabled this road to perform the large transportation requirements of the huge Marine base at Cherry Point, N. C.

With the coming of the Marines to Cherry Point, adequate service on the line was declared a military necessity, and a rebuilding program was begun. The Navy loaned the operators $400,000 and the state loaned $200,000 for improving the roadbed. Heavier rail was laid, new ties put down, the track was reballasted, and ditches were cleared all the way from Goldsboro to Morehead City.

This work was done while freight, unprecedented in the history of the line, was moving in and out of Cherry Point. This traffic has brought the annual gross revenues up from approximately $300,000 in 1939 to about $1,500,000 in 1944. In the same period, the operators have paid the state approximately $500,000 in rentals and repayment of indebtedness.

Says Some Railroads Favor St. Lawrence Seaway

Evidence that "the railroads are far from being united" in opposing the St. Lawrence seaway has been found by Senator Aiken, Republican of Vermont, in a recent newspaper article which said it had been "reported from Washington" that the Rutland would petition the court for an extension of time in which to file its plan of reorganization, the request to be based on prospective favorable developments, including construction of the seaway which "would have a highly beneficial effect on the road's traffic volume, it was said."

Senator Aiken, sponsor of legislation to approve the St. Lawrence agreement with Canada, made the article his text for brief remarks in the Senate on November 22. "The Rutland," he said, "parallels the St. Lawrence seaway, and it is asking for an extension of time because if the seaway is constructed the position of the railroad will be materially improved.

"I think the same condition prevails in regard to the New York Central; not that they have petitioned for the seaway or anything like that, but they also parallel it, and would be benefited by the increased volume of business which would result from the completion of the St. Lawrence development. . . . A great many of the western roads are known to favor it, and individual directors and officers of the railroads throughout the eastern part of the United States are actually working for the project, knowing that what benefits the country as a whole and what increases their tonnage as a whole is bound to help them."

A couple of days later Senator Aiken made another brief speech to advise the Senate of the formation on November 21 of the National St. Lawrence Association to promote the development of the seaway. Mr. Aiken read a list of "well-known businessmen" participating in the association which has opened an office at Detroit, Mich. Among them was Julius H. Barnes, of Duluth, Minn., "three times president of the United States Chamber of Commerce" who has been elected president of the association.

On November 28, Senator Aiken came along again with another endorsement of the seaway. It was from Grover B. Hill, under-secretary of agriculture, whose views on the matter had been requested by the senator. Mr. Hill obliged, coming through with a favorable letter which Mr. Aiken inserted in the Congressional Record.

B. & O. Manual Offers Tips to Passenger Traffic Branch

The Baltimore & Ohio reports that it has had "gratifying results" following the issuance of a 12-page office manual to its passenger traffic department, in Washington. Prepared under the direction of D. L. Mooreman, the booklet had been distributed to every employee in the department, reminding one and all of the railroad's dependence on employees' maintaining "harmonious relations" with the public.

The manual includes an explanation of the organizational setup of the passenger department and ticket office, as well as general information on office hours, vacation regulations, etc. One courtesy tip to the ticket seller had to do with passengers applying for one-way tickets to points where round-trip tickets might be sold. The railroad suggested that the ticket seller should ask the traveler, "May we sell you a round-trip ticket and secure your reservation for the return trip?"

234 Miles of Train Communication for the Coast Line

The Atlantic Coast Line has ordered from the Union Switch & Signal Co., Swissvale, Pa., inductive type train communication equipment for six wayside fixed stations and 45 mobile units sufficient to equip all regularly scheduled freight and passenger trains operating over approximately 234 miles of Coast Line system between Rocky Mount, N. C., and Florence, S. C., via Wilmington, N. C., as well as switching locomotives

Type of Installation to Be Used by the Atlantic Coast Line

operating over approximately 38 miles of track in South Rocky Mount freight yards.

The line to be equipped comprises a portion of the double-track line from Rocky Mount to Contentnea, N. C., the important single track line from Contentnea to Pee Dee, S. C., via Wilmington, and another portion of the double track main line from Pee Dee to Florence. This line represents an important segment of the Coast Line system, serving military installations at Goldsboro (Seymour Johnson Field), Wilmington (Bluementhal Field and Fort Fisher), Holly Ridge (Camp Davis), and Jacksonville (Camp LeJuene), as well as shipyards and war industries at Wilmington.

In making the announcement of the project, C. McD. Davis, president of the railroad said, "It is being undertaken to determine the extent to which electronic train communication can increase efficiency of freight and passenger train operation and supplement existing safety measures, particularly on those portions of the double track main line included in the installation which are now equipped with automatic block signals and automatic train control. Such increased efficiency of operation will result in expediting movement of military and essential civilian freight and passenger traffic. Subject to the approval of the War Production Board and such approval of Interstate Commerce Commission as may be required, the equipment will be installed as quickly as received from the manufacturer."

Charge Service Order Violation

The trustee of the Central of Georgia confessed judgment in the federal court at Savannah, Ga., on November 18, to a complaint charging that road with violations of Interstate Commerce Commission Service Order No. 178, according to I. C. C. Secretary W. P. Bartel. A penalty of $1,000 and costs was imposed and paid. The violations charged consisted in transporting empty beer containers in RS-type refrigerator cars, contrary to the requirements of the commission's order. The matter was investigated by the commission's Bureau of Inquiry.

Gets Rid of Rail Tie-Up, but Still Loses Bus Route

After arranging for capital stock changes designed to remove the basis for an Interstate Commerce Commission finding that it was "affiliated with a carrier by railroad," the Southwestern Greyhound Lines found itself unable on further hearing to convince the commission that its proposed acquisition of Arkansas Motor Coaches, Limited, Inc., would be consistent with the public interest. The proceeding is docketed as No. MC-F-1678, and the report on further hearing is dated November 14, the dissent of Commissioner Miller being noted.

The prior report had looked into the relationship between Southwestern Greyhound and Southern Pacific, finding that 16⅔ per cent of the former's class A voting stock was owned by the S. P. "and one of its motor carrier subsidiaries, Southwestern Transportation Company"; and that two members of Southwestern Greyhound's board of directors were officers of the S. P. while another was an officer of the St. Louis-Southwestern, a "subsidiary" of the S. P. Because of these and other circumstances, the prior report took the position that the applicant was affiliated with a carrier by railroad; and that it had not made the special showing required in section 5 that the proposed transaction would not unduly restrain competition and would enable the railroad to use the service by motor vehicle to public advantage in its operations.

At the further hearing it was shown that all S. P. and Southwestern Transportation Company holdings of Southwestern Greyhound class A voting stock had been exchanged with the Greyhound Corporation for class B non-voting shares; that the operating agreement between S. T. C. and S. G. had been modified; and the S. P. and Cotton Belt officers had resigned from S. G.'s board of directors. Thus the applicant took the position that it was no longer affiliated with a carrier by railroad within the meaning of section 5 (6).

I. C. C. Hard to Satisfy.—In turning to a "not consistent with the public interest" finding to affirm the prior report's adverse decision, the commission found it "unnecessary to determine whether Southwestern Greyhound or Greyhound (Corporation), or both, are or are not affiliated with a railroad within the meaning of section 5 (6)." It added that "in considering the application without applying the proof requirements of the proviso of section 5 (2) (b), we are not to be understood as determining such question or affiliation."

As the commission's report set it up, Southwestern Greyhound's principal interest in Arkansas Motor Coaches' operation was to obtain the latter's route between Memphis and Texarkana, a 318-mile run over paved highways whereas the applicant's route covered 327 miles, including 98 miles of gravel highway. Protestant motor carriers were members of the National Trailways System, including the Missouri Pacific Transportation Company, subsidiary of the Missouri Pacific, which now operates a Memphis-Texarkana service over the route used also by Arkansas.

The commission took the position generally that the long-distance service in the territory is now generally satisfactory, although it did concede that consummation of the transaction would give Southwestern Greyhound a better route with some advantage to travelers over its lines. However, the report added, "restraint of competition which would also result, and the likely adverse effect on remaining motor bus carriers outweigh any such advantage." Moreover a look into the set-up for local services convinced the commission that "the preservation of the existing competitive situation is more likely to result in efficient local services" at points served by Arkansas and Southwestern Greyhound than would be the case if the latter were permitted to serve the additional territory.

Strike Ends on North Shore and Aurora Railroads

The seventeen-day strike of the Brotherhood of Railroad Trainmen and the Brotherhood of Locomotive Firemen & Enginemen which completely tied up service on the Chicago, North Shore & Milwaukee and the Chicago, Aurora & Elgin, interurban electric lines, ended on November 26, when, at 3 a. m., the unions and the receiver for the railroads signed an agreement. Service was resumed at 4 a. m. the following day. Under the agreement, the striking employees will receive a wage increase of five cents an hour, the amount being the

same as that recommended by a presidential emergency board in October. The unions had demanded nine cents an hour and called the strike on November 10 in protest against the board's recommendation. The retroactive provision of the emergency board's recommendation for the increase is part of the agreement, the date being February 4 on the North Shore and April 6 on the Aurora. A clause in the agreement states that the employees do not lose their rights under the Railway Labor Act.

Settlement of the strike was a result of mediation conducted by Robert L. Glenn, railway labor consultant of the National War Labor Board, on November 25 and 26. This intervention followed unsuccessful attempts to settle the dispute made on November 24 by Robert L. Gordon, acting state director of labor. At this conference the unions offered to send their men back to work at five cents an hour if the company would agree to submit a joint request to the National Railway Labor Panel for an additional four cents. During the strike, several communities appealed to the President. Although the striking employees numbered only 500 motormen, conductors and collectors, the company laid off 1,500 nonoperating employees for whom there was no work when no trains were running. Many of these and the striking employees were able to secure work in defense plants at higher rates of pay.

Seek Revision of Depreciation Accounting Order

The Interstate Commerce Commission has been asked to reconsider its order of August 21 (noted in *Railway Age* of September 2, page 383) requiring that accrued depreciation and amortization be shown on the asset side of railroad balance sheets as deductions from the property investment account, with a net figure after deductions extended to enter total assets. The request was made in a letter from E. H. Bunnell, vice-president of the Association of American Railroads, addressed to Commissioner Mahaffie as chairman of Division 1 of the commission.

Under the terms of the order, railroads would be required to put the change in accounting procedure into effect January 1, 1945. Pending reconsideration, the commission has been asked to postpone the effective date.

In detailing objections to the order in its present form, Mr. Bunnell pointed out that, contrary to the principles underlying double-entry bookkeeping, it requires mingling credit accounts with debit accounts, and so tends to create confusion rather than clarity. Arguing that any change from accepted accounting practices should be made only to obtain "affirmative benefits," he observed that the change in question serves no useful purpose and adds nothing to disclosures made by railroad balance sheets.

On the other hand, the letter continued, compliance with the order may result in misleading those who use the reports, especially if the figures so developed are taken to indicate a valuation of assets. Further, it said, the order requires an incorrect statement of "Investment in transportation property less recorded depreciation and amortization," since that caption does not accurately describe the corresponding figures, while figures properly corresponding to the caption cannot practicably be shown.

9-Year Trusteeship of Western Pacific to Be Lifted

The Western Pacific will emerge, on December 29, from its nine-year trusteeship, under a final order issued by the Federal District Court at Denver, Colo. Present management and operation of the road will continue under the corporate title of Western Pacific Railroad Corporation.

I. C. C. Service Orders

Termination on December 1, instead of December 3, of the heavy penalty demurrage charges on box cars made effective by Interstate Commerce Commission Service Order No. 242 has been announced by Col. J. Monroe Johnson, director of the Office of Defense Transportation.

Explaining that the box car supply has now somewhat improved, both as a result of the passage of the peak loading season and as greater efforts of shippers and carriers improved their utilization, Col. Johnson indicated that discontinuance of the super-demurrage rates does not indicate any marked easing of the situation. He warned that any slackening in efforts to get the greatest possible use out of the available car supply undoubtedly would bring about further restrictive measures.

Service Order No. 255, effective December 7, provides for the handling of overloaded freight cars. Under its terms cars are considered overloaded when the weight of lading plus dunnage exceeds the load limit stenciled on the car or, in the case of cars not so marked, is greater than 110 per cent of the marked capacity. The order requires that cars found to be overloaded before they have been moved from the switching limits at the point of origin shall not be forwarded until the excess freight is removed by the shipper, to whom notice must be given. Such cars are subject to regular demurrage charges from the first 7:00 a.m. after notice is sent, without free time.

When overloading is discovered after cars have been moved beyond origin switching limits, carriers are required either to transfer the excess load to another car or to obtain other disposition of the excess from the shipper. Provision is made for the assessment of freight charges in such situations. Charges are to be based on actual weight, subject to traiff minimums, of the freight left in the original car, and actual weight, subject with certain limitations to 50 per cent of the tariff minimum weight requirement, on the car loaded with the excess freight.

Service Order No. 243, which concerns light-weighing of tank cars, has been further modified by Second Revised No. 243, effective November 25. As thus liberalized, the order provides that a tank car may be lightweighted once in connection with each loaded trip. If so weighed before loading, the bill of lading and weighbill must show the light weight, and under such conditions the car shall not be light-weighed upon release from load. Cars not light-weighed before loading may be weighed after unloading at destination.

A blanket permit authorizing the use of tank cars of less than 7,000-gal. capacity in the eastern petroleum service into the states of North Carolina, South Carolina, Georgia and Florida has been issued by the Office of Defense Transportation, thus modifying to that extent the prohibition on such use established under that agency's October 9 direction under General Order ODT-7.

Service Order No. 253, which required rerouting of traffic intended for movement over the Chicago, Aurora & Elgin and Chicago North Shore & Milwaukee, was set aside, effective November 27, upon termination of the "work stoppage" affecting those roads.

No Objection to R.R. Operation of Planes

(*Continued from page 857*)

preted, the Civil Aeronautics Board will apparently have to forbid some combinations that are desirable in the public interest.

"Our analysis of arguments has indicated that some arguments in favor of air-surface combinations apply exclusively or with greater force—and some of the adverse arguments apply with less force—to air-steamship combinations in international transportation than to domestic air-land carrier combinations.

"The relatively high cost of establishing the necessary traffic personnel and experience for transoceanic service indicates the possibility of relatively large economies through avoidance of duplication in such service. The need to meet the competition of foreign air-surface combinations does not arise in domestic transportation.

"Accordingly, the provisos that limit CAB approval of combinations are likely to be particularly mischievous in their application to air-steamship combinations in international transportation.

"We conclude that the prerequisites for approval of air-surface carrier combinations and for the issuance by the Civil Aeronautics Board of certificates of public convenience and necessity to surface carriers or their affiliates ought to be confined to the declared policy of the Act and (for the requirements of public interest under the issuance of certificates) the requirements of willingness and ability imposed upon all applicants."

House Passes Highway Bill

The House of Representatives on November 29 passed the post-war highway bill, sending it to conference for reconciliation of differences with the Senate revision. The House acted on H.R. 4915, the bill reported last June from its roads committee; the Senate version is S. 2105, passed by the upper branch on September 15.

H. R. 4915 would authorize appropriations totaling $1,500,000,000 to become

available at the rate of $500,000,000 a year for each of the first three post-war fiscal years. The Senate-approved S. 2105 would authorize appropriations to taling $1,350,000,000 at the rate of $450,000,000 a year. Provisions relating to the use of federal funds for grade crossing eliminations are also different in the two bills.

The House version would permit the entire cost of such eliminations to be paid from federal funds, except that not more than 50 per cent of the right-of-way and property damage costs, paid from public funds on any such project, could be paid from federal funds. During this week's consideration of the bill, the House adopted an amendment stipulating that not more than 15 per cent of the highway funds apportioned to any state could be used for railway crossing projects. The Senate version fixes this proportion at 10 per cent, and also contains a proviso which would require railroads involved to pay not less than 15 per cent of the costs on crossing projects.

Speaking in the House on November 28, Representative Reed, Republican of New York, expressed his opposition to having the latter proviso in any bill finally enacted. He asserted that "a large group of persons in this country" want to bring about government ownership of the railroads; and he knows of "no better method for this group to achieve such an undesirable purpose than to require the railroads to pay 15 per cent of the cost of grade-crossing elimination." Such a proposal, he added, "is manna from Heaven for the demagogues": for "to impose this burden on the railroads during the post-war period when wartime earnings have ceased and tax burdens have increased, will drive the railroads again into the hands of receivers."

Congressman Reed also hailed the wartime record of the railroads, pointing out that in achieving it they have worn out much of their equipment, which will have to be replaced "if post-war efficiency in the field of transportation is to be maintained." And he predicted that the needed replacements of rolling stock, rails, and ties "will furnish more jobs for men than the proposal to put 15 per cent of grade-crossing elimination upon the railroads."

Meanwhile, Representative Snyder, Democrat of Pennsylvania, has come up with another super-highway bill. On November 27 he introduced H. R. 5538 "to provide for the location, survey, and building of a system of superhighways, three east and west and six north and south highways."

Circuitous Truck Route Banned Under O. D. T. Order

Three truckers whose operations have formed a route for transporting freight between San Francisco and Denver have been ordered by the Office of Defense Transportation to discontinue the acceptance or receipt of property for transportation over any circuitous route between Wells, Nev., and Salt Lake City or Ogden, Utah, via any point in Idaho. This action was the first of its kind taken by the O. D. T. under the terms of its General Order ODT-3 Revised, which has been in effect since June 1, 1942, the O. D. T. announcement indicated.

The general order prohibits use of circuitous truck routes for the movement of freight where an adequate common carrier service is available over a direct route. A circuitous route is defined in the order as any route or combination of routes with a mileage in excess of 10 per cent more than that of the most direct highway route.

The three carriers involved operated between San Francisco and Twin Falls, Ida., between Twin Falls and Ogden and Salt Lake City, and between Salt Lake City and Ogden and Denver, respectively, and they had entered into an arrangement for the interchange of freight at Twin Falls and at Ogden or Salt Lake City in connection with through eastbound and westbound traffic between Denver and San Francisco. The route via Twin Falls and Salt Lake City is 21.6 per cent longer than the direct San Francisco-Denver route, the O. D. T. explained, and the route via Twin Falls and Ogden is 12 per cent longer, so that both exceed the limitations set up in the general order.

The order applies not only to traffic moving between the two terminals named, but to the transportation via Twin Falls of shipments accepted by these carriers from Wells, or points west and destined to or through Ogden or Salt Lake City, or the reverse, but does not prohibit the acceptance of freight for transportation by the direct highways between Wells and Ogden or Salt Lake City. The O. D. T. estimates that about 120,000 truck miles a year will be saved by the order prohibiting use of the Twin Falls route.

Superintendents at Memphis Elect Officers

The Railroad Superintendents' Association of Memphis, Tenn., has elected the following officers for the ensuing year: President, H. K. Buck, terminal superintendent of the Illinois Central; vice-president, N. N. Hopkins, assistant treasurer and superintendent of the Union; and secretary-treasurer, C. W. Wilson, terminal trainmaster of the Louisville & Nashville.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

ALLIED RAILWAY SUPPLY ASSOCIATION.—J. F. Gettrust, P. O. Box 5522, Chicago 80, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. P. Soebbing, 1450 Railway Exchange Bldg., St. Louis, Mo.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. J., 143 Liberty St., New York 6, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—Miss Elinor Heffern, Room 839, 310 S. Michigan Ave., Chicago 4, Ill. Annual meeting May 8-10, 1945, Hotel Stevens, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—Miss Elinor Heffern, Room 839, 310 S. Michigan Ave., Chicago 4, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York 6, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—P. E. Taylor, A. T. & S. F. Ry., Topeka, Kan. Next meeting, December 14-15, 1944, Palmer House Club Bldg., Chicago, Ill.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 13-15, 1945, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—Virginia Tanner, Baltimore & Ohio Magazine, Room 1202, B. & O. Bldg., Baltimore 1, Md.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—J. P. Nye, Tower Bldg., Washington 5, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York 18, N. Y.
Railroad Division.—E. L. Woodward, Railway Mechanical Engineer, 105 W. Adams St., Chicago 3, Ill.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York 17, N. Y.

AMERICAN WOOD-PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington 5, D. C.

ASSOCIATED TRAFFIC CLUBS OF AMERICA, INC.—R. A. Ellison, Cincinnati Chamber of Commerce, 1203 C. of C. Bldg., Cincinnati 2, O.

ASSOCIATION OF AMERICAN RAILROAD DINING CAR OFFICERS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago 5, Ill.

ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington 6, D. C.

Operations and Maintenance Department.—Charles H. Buford, Vice-President, Transportation Bldg., Washington 6, D.C.

Operating-Transportation Division.—L. R. Knott, 59 E. Van Buren St., Chicago 5, Ill.

Operating Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Transportation Section.—H. A. Eaton, 59 E. Van Buren St., Chicago 5, Ill.

Communications Section.—W. A. Fairbanks, 30 Vesey St., New York 7, N. Y.

Fire Protection and Insurance Section.—W. F. Steffens, New York Central, Room 3317, 230 Park Avenue, New York 17, N. Y.

Freight Station Section.—N. Kaplan, 59 E. Van Buren St., Chicago 5, Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Protective Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 13-15, 1945, Palmer House, Chicago, Ill.

Construction and Maintenance Section.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 13-15, 1945, Palmer House, Chicago, Ill.

Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York 7, N. Y.

Mechanical Division.—Arthur C. Browning, 59 E. Van Buren St., Chicago 5, Ill.

Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago 5, Ill.

Purchases and Stores Division.—W. J. Farrell (Executive Vice-Chairman), Transportation Bldg., Washington 6, D. C.

Freight Claim Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago 5, Ill.

Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington 6, D. C.

Car Service Division.—E. W. Coughlin, (Assistant to Chairman), Transportation Bldg., Washington 6, D. C.

Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington 6, D. C.

Accounting Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C.

Treasury Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C.

Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington 6, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Alton R. R., 340 W. Harrison St., Chicago 7, Ill.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—P. R. Austin, Johns-Manville Sales Corp., Merchandise Mart, Chicago, Ill.

CANADIAN RAILWAY CLUB.—C. R. Crook, 4415 Marcil Ave., N. D. G., Montreal, Que. Regular meetings second Monday of each month, except June, July and August, Mount Royal Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, MO.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel De Soto, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—F. H. Stremmel, 6536 Oxford Ave., Chicago 31, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Ralph I. Feddor, 2803 N. Campbell Ave., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—R. E. Mann, 1840-42 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings,

second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—H. J. Hawthorne, Union Railroad, East Pittsburgh, Pa.

EASTERN CAR FOREMAN'S ASSOCIATION.—W. P. Dizard, 30 Church St., New York 7, N. Y. Regular meetings, second Friday of January, February (Annual Dinner), March, April, May, October and November, 29 W. 39th St., New York, N. Y.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—C. M. Lipscomb, 1721 Parker Street, North Little Rock, Ark.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany 3, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Ben Smart, 7413 New Post Office Bldg., Washington, D. C.

NATIONAL ASSOCIATION OF SHIPPERS' ADVISORY BOARDS.—W. B. Shepherd, Aluminum Company of America, Gulf Bldg., Pittsburgh, Pa.

NATIONAL INDUSTRIAL TRAFFIC LEAGUE.—Edward F. Lacey, Suite 450, Munsey Bldg., Washington 4, D. C. Annual meeting, November 29-30, 1945, Palmer House, Chicago, Ill.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago 4, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Vendome, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York 7, N. Y. Regular meetings, third Thursday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y. Annual dinner, December 7, 1944, Hotel Commodore, New York, N. Y.

NORTHWEST CARMEN'S ASSOCIATION. — E. N. Myers, Minnesota Transfer Ry., 1434 Iowa Ave., St. Paul, Minn. Regular meetings, first Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul, Minn.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box A, Sausalito, Cal. Regular meetings, second Thursday of each alternate month, at Palace Hotel, San Francisco, Cal., and Hotel Biltmore, Los Angeles, Cal.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago 3, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 308 Keenan Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 624 W. Adams St., Chicago 6, Ill.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, Room 811, Utilities Bldg., 327 S. La Salle St., Chicago 4, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 308 Keenan Bldg., Pittsburgh, Pa.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with Communications Section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 610 Shell Bldg., St. Louis 3, Mo. Annual meeting, May 8-9, 1945, Netherland Plaza Hotel, Cincinnati, O.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—Miss Elinor Heffern, Room 839, 310 S. Michigan Ave., Chicago 4, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with A. A. R. Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga., Savannah, Ga.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto 2, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q. and C. Company, 59 E. Van Buren St., Chicago 5, Ill.

UNITED ASSOCIATIONS OF RAILROAD VETERANS.—Roy E. Collins, 112 Hatfield Place, Port Richmond, Staten Island 2, N. Y.

WESTERN RAILWAY CLUB.—E. E. Thulin, Suite 339, Hotel Sherman, Chicago, Ill. Regular meetings, third Monday of each month, except January, June, July, August and September, Hotel Sherman, Chicago, Ill.

Christmas Trees Get Rough Cars

Rough freight cars, including plain or automobile box cars, below the minimum standard for normal freight haulage, will be made available this year for the movement of Christmas trees, according to provisions for such traffic made by the Association of American Railroads. While such cars are adequate for this business, they are unsuited to the movement of most commodities, and their use will thus not interfere with the other traffic, it was pointed out.

Cashen Named to O.W.M. and R. Advisory Board

Thomas C. Cashen, president of the Switchmen's Union of North America and chairman of the Railway Labor Executives' Association, has been appointed by President Roosevelt to be one of the three labor members of the 12-member advisory board in the Office of War Mobilization and Reconversion. In addition to the labor members, the board includes three public members, three agriculture members, and three industry members. The appointments were confirmed by the Senate on November 28.

Supply Trade

E. H. Branning, head of the hardware and tools procurement division of the Army Service Forces, has been appointed general manager of the **Wood Shovel & Tool Co.**

H. R. Pittman has been appointed treasurer of the **Vulcan Iron Works,** Wilkes-Barre, Pa., to succeed **W. W. Moss** who has resigned. Mr. Pittman has been associated with the Vulcan Iron Works for twenty-seven years, serving successively as chief clerk, comptroller, and in recent years as both assistant secretary and assistant treasurer.

John P. Roche, assistant to the president of the **Oliver Iron & Steel Corp.,** Pittsburgh, Pa., has been appointed industry member, National War Labor Board, Washington, D. C. For the past year and a

John P. Roche

half, Mr. Roche has served as an industry member of the Third Regional War Labor Board at Philadelphia, Pa.

John M. Mille has been appointed assistant to the president of the **Pittsburgh Steel Foundry Corporation,** Glassport, Pa. Mr. Mille was formerly manager of the company's Arsenal Machine Shop. Prior to joining Pittsburgh Steel, he had been

John M. Mille

associated with the Lewis Foundry & Machine Co. as vice-president and works manager, and with the Continental Foundry & Machine Co. as manager of machine shops in East Chicago, Ind., Wheeling, W. Va., and Coraopolis, Pa.

Lloyd E. Huber, for the past twenty-one months senior purchasing officer, car section, transportation corps, War Depart-

Lloyd E. Huber

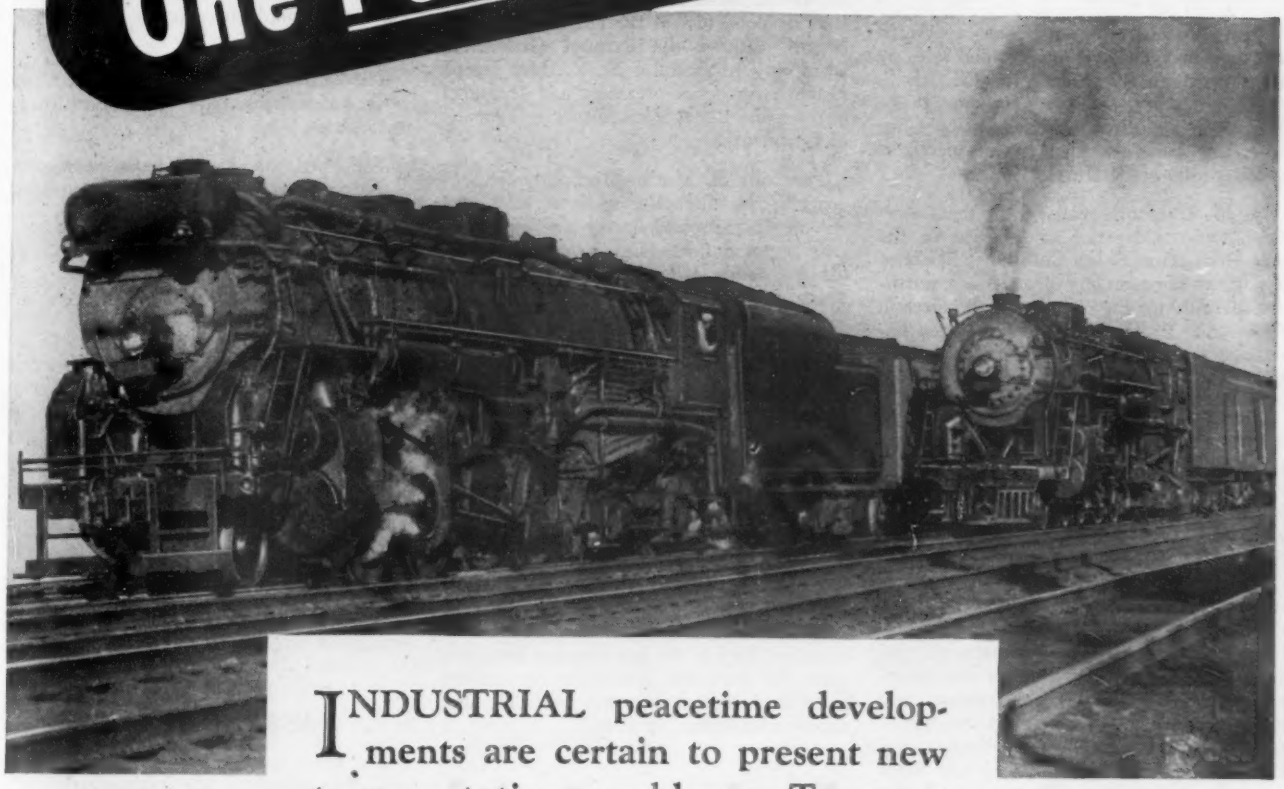
ment, has been appointed sales agent of the **Pullman-Standard Car Manufacturing Company** and the **Pullman-Standard Car Export Corporation,** with headquarters in Washington. Prior to his appointment with the transportation corps, Mr. Huber was supervisor of priorities in the purchasing department of the Baltimore & Ohio, with which railroad he had been associated in various capacities in the stores and purchasing department since 1913.

Mullaney & Campbell, Seattle, Wash., has been appointed exclusive sales representative in the Seattle territory for the **Whiting Corporation,** Harvey, Ill.

John D. Herr has been elected vice-president of the **Spring Packing Corporation,** Chicago. Mr. Herr was born in Altoona, Pa., and, after serving the Penn-

News Department continued on next left-hand page

One Post War Answer!



INDUSTRIAL peacetime developments are certain to present new transportation problems. To meet demands for faster deliveries, inadequate motive power will have to be replaced by the most modern types of locomotives.

Lima Super-Power steam locomotives are the answer to this problem—locomotives that have the capacity for sustained performance on the most exacting schedules.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

sylvania in various capacities, entered the employ of the Spring Packing Corporation in 1922.

The **Buffalo Forge Company** has been awarded a third renewal of its Army-Navy "E" for continued excellent production achievement.

Lyman H. Bellows has been appointed sales manager for the **Sheldon Machine Company.** Mr. Bellows formerly was with the electric tool division of the Stanley Works.

Harold Martin has been appointed assistant manager of New England sales by the **American Steel & Wire Co.**, U. S. Steel subsidiary. He will continue to be located in the Boston, Mass., sales office where he has been manager of merchant product sales since March, 1942.

J. M. Driscoll, manager of the Cleveland, Ohio, industrial sales office of the **Air Reduction Sales Company,** has been appointed manager of railroad sales, northern division, for the company with offices in Cleveland. **S. H. Newburn** has been appointed acting manager of the Cleveland industrial sales office.

David M. Waterhouse, formerly eastern representative in the railroad field for the Pantasote Company, has organized his own company under the name of **Waterhouse & Co.,** with general offices in Plainfield, N. J., and a sales office at 30 Church Street, N. Y. Mr. Waterhouse plans to open other sales offices when the war ends in Boston, Mass., Pittsburgh, Pa., and Atlanta, Ga., and to cover the territory extending from Boston to Pittsburgh and from Buffalo, N. Y., to Florida with materials suitable for the construction and maintenance of passenger-train car equipment. The company plans to contact also the transit, bus, marine and airway fields in the same territory. Waterhouse & Co. will represent the following companies in these fields: A. Theo. Abbot & Co., Philadelphia, Pa., "Kapock" Aquapruf-Sunfast fabrics; Blanchard Bro. & Lane, Newark, N. J., leather coverings; Collins & Aikman Corp., New York, pile fabrics for seat coverings; R. L. Hanson, Inc., New York, equipment in steel, aluminum and stainless steel with fabrications by the Watson Manufacturing Company of Jamestown, N. Y.; Micro Molding Corporation, Plainfield, N. J., molded plastic materials for miscellaneous products of special design; Technical Ply-Woods, Chicago, resin bonded plywoods; Union Instrument Corporation, Plainfield, N. J., machine work in steel and brass for miscellaneous products of special design; and the Western Shade Cloth Company, Chicago, vinyl coated and pyroxylin coated artificial leathers.

David M. Waterhouse

David B. Joseph has been appointed representative in the southern Ohio district, with headquarters in the Hotel Alms, Cincinnati, O., for the **Samuel Greenfield Company** of Buffalo, N. Y. Mr. Joseph formerly was vice-president and treasurer of the Edna Brass Manufacturing Company of Cincinnati.

The **John H. Mathis Company** of Camden, N. J., shipbuilders since 1880, and serving the railroad industry for many years with tugs, car floats, and barges, has established an office at 88 Broad Street, Boston, Mass., to serve its New England business. **Milton Fisher, formerly vice-president and** general manager of the Somerset Shipbuilding Company, has been appointed resident representative.

OBITUARY

Charles A. Scott, manager of the Railroad Insurance Association of New York, died November 25. He was 64 years of age. Mr. Scott has been associated with the insuring of railroads for the past 43 years. He first was connected with the Railroad Insurance Syndicate, which was dissolved during the last war, and has been with the Railroad Insurance Association since its inception 24 years ago. He was appointed manager in 1941.

Equipment and Supplies

LOCOMOTIVES

The CANADIAN PACIFIC has ordered 13 Diesel-electric switching locomotives from the American Locomotive Company.

The AROOSTOOK VALLEY has ordered two Diesel-electric freight and switching locomotives of 380 hp. each from the General Electric Company.

The PACIFIC GREAT EASTERN has ordered two steam freight locomotives of 2-8-2 wheel arrangement for delivery in May, 1945, from the Canadian Locomotive Company.

The MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE has ordered two Diesel-electric road switching locomotives of 1,000 hp. each from the American Locomotive Company for service on the Duluth, South Shore & Atlantic.

The MINNEAPOLIS & ST. LOUIS has ordered two 4,050-hp. Diesel-electric road locomotives from the Electro-Motive division of the General Motors Corporation. The authorization for the purchase of this equipment was reported in the *Railway Age* of October 7.

FREIGHT CARS

The CHESAPEAKE & OHIO is inquiring for 1,000 box cars of 50 tons' capacity.

The ERIE has issued inquiries for 500 box cars of 50 tons' capacity.

The CANADIAN PACIFIC has announced plans to rebuild 50 cabooses in its Angus shops.

The LEHIGH VALLEY has ordered fifteen 24-ft. 4-in. caboose cars from the railroad's own shops.

The FRUIT GROWERS' EXPRESS COMPANY is inquiring for 125 41-ft. steel sheathed refrigerator cars of 40 tons' capacity.

The WESTERN FRUIT EXPRESS COMPANY is inquiring for 175 41-ft. steel sheathed refrigerator cars of 40 tons' capacity.

The MINNEAPOLIS & ST. LOUIS has ordered 500 40½-ft. double sheath steel box cars of 50 tons' capacity from the General American Transportation Corporation. The authorization for the purchase of this equipment was reported in the *Railway Age* of October 7.

The NEW YORK, CHICAGO & ST. LOUIS has ordered 500 all steel box cars of 50 tons' capacity from the Ralston Steel Car Company for delivery during the second quarter of 1945. The inquiry for this equipment was reported in the *Railway Age* of October 28.

PASSENGER CARS

The MINNEAPOLIS & ST. LOUIS has placed an order for six stainless steel air-conditioned passenger-train coaches with the Edward G. Budd Manufacturing Company. The authorization for the purchase of this equipment was reported in the *Railway Age* of October 7.

The CANADIAN PACIFIC has issued inquiries for ten baggage-express cars. The railroad also has asked for bids on steel frames for 35 lightweight air-conditioned coaches and five air-conditioned roomette sleepers on which the finish will be applied by the railroad at its Angus shops. Each of the roomette cars will have five double bedrooms and ten roomettes. In the daytime the enclosed roomette will be made up as a single seat with all facilities for the passenger, including baggage rack, clothes locker, ice water, toilet and wash basin.

SIGNALING

THE MISSOURI PACIFIC has contracted with the General Railway Signal Company for materials to install absolute permissive block signaling on 41 mi. of road between Forest Hill, La., and Kinder. The contract includes 53 type D signals.

THE INTERNATIONAL GREAT NORTHERN has ordered materials from the General

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Increased Capacity FOR FRISCO FASTER FREIGHT 4-8-4's

Franklin Type "E" Locomotive Boosters*
used in both Freight and Passenger Service

Heavy freight and passenger traffic moves fast on the FRISCO, because its 4500 Class 4-8-4 locomotives, used in both kinds of service, have Franklin Type E Boosters.

The Booster saves starting time by providing quicker pick-up. It enables the locomotive to accelerate rapidly to road speed and maintain speed on grades.

By making it possible to haul heavier trains at sustained speeds, it helps to increase the traffic capacity of any line.

These advantages can be secured by any railroad through the application of Franklin Type E Boosters to its locomotives.

*Trade Mark Reg. U.S. Pat Off.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.
NEW YORK • CHICAGO
In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

Railway Signal Company for the installation of 47.5 mi. of absolute permissive block signaling between San Marcos, Tex., and San Antonio. Among the materials ordered are 7 type K electric lever locks, 71 type D signals, 3 type G signals, 3 type ME dwarf signals, and 2 model 9A electric switch locks.

THE SPOKANE, PORTLAND & SEATTLE has contracted with the General Railway Signal Company for materials and labor to install absolute permissive block signaling on four stretches of territory totaling 85 miles; Mt. Pleasant, Wash., to Skamania, 16 miles; Home Valley, Wash., to Lyle, 30 miles; Votaw, Wash., to Harder, 28 miles; and South Cheney, Wash., to Scribner, 11 miles.

THE DENVER & RIO GRANDE WESTERN has ordered from the General Railway Signal Company materials for the coded remote control of a power switch at Nolan, Utah, from the station at Kyune, Utah. The control machine has 5 rotary levers, 2 start buttons, 9 diagram lights and 2 key switches. Also included in the order are a model 5D dual-control switch machine, 1 type D ground signal and 6 type SA dwarf signals.

The DENVER & RIO GRANDE WESTERN has ordered from the General Railway Signal Company equipment for an all-relay electric interlocking and for a mechanical interlocking at Dotsero, Colo., the junction point of the D. & R. G. W. with the D. & S. L. line through Moffatt Tunnel. The control machine is a table mounting model with a 15 in. by 22 in. panel equipped with 2 switch lock levers, 5 signal levers, and 9 track indication lights. This unit-wire machine is to control 11 signals and 2 electric switch locks. A 9-lever Saxby and Farmer mechanical interlocker is to operate 6 switches, 3 facing-point locks and a Hayes derail. The all-relay and the mechanical plants are interlocked electrically.

RAIL-AIR EXPRESS.—In the first nine months of this year, air express shipments in combined air-rail service showed an increase of 11.6 per cent over the similar period in 1943. The Air Express Division of Railway Express Agency has also reported that revenue from such air-rail traffic exceeded $3,000,000 in the nine-month period.

SAFETY RECORD.—The Atlantic Coast Line's shop force at St. Petersburg, Fla., up to September 1, 1944, had chalked up a record of 5,656 days without personal injuries of a serious nature, this road reported in its employee magazine for November. Apparently the last injury that caused a loss of more than three days occurred in March, 1929. The St. Petersburg shop crew consists of 35 men, and as W. C. Clarke, foreman in charge, explains it, it's "their desire to keep everlastingly at it, that has enabled the employees at this point to work in a safe manner these many years."

Construction

DENVER & RIO GRANDE WESTERN.—This road has recently awarded a contract to the C. L. Hubner Company, Denver, Colo., for repairing, raising wing walls and extending culverts on nine concrete culverts, and repairing abutments and wing walls on six bridge abutments between Price, Utah, and Grand Junction, Colo.

LOUISVILLE & NASHVILLE.—This road has applied to the Interstate Commerce Commission for authority to build a 1.9-mile branch in the vicinity of Madisonville, Ky. The coal mining area to which it would afford access is not served by any railroad, but the Illinois Central has filed an application for authority to build into it, as noted in *Railway Age* of November 4, page 705.

Financial

BALTIMORE & OHIO.—*Equipment Notes.*—The B. & O. has accepted a bid by the National Commercial Bank & Trust Co., of Albany, N. Y., of an interest rate of 1.65 per cent on $632,350 principal amount of equipment notes, series E, payable in 30 quarterly installments. The notes will be issued subject to the approval of the Interstate Commerce Commission in connection with the company's purchase of two 4,000-hp. Diesel-electric passenger locomotives to be built by the Electro-Motive division of the General Motors Corporation. The railroad's request for bids on this issue was reported in the *Railway Age* of November 18, page 798.

BALTIMORE & OHIO.—*Acquisition.*—This road has applied to the Interstate Commerce Commission for authority to purchase 9,490 ft. of the line of the Monongahela West Penn Public Service Co., at Hartland, W. Va., a suburb of Clarksburg, over which it has heretofore operated under a trackage agreement.

BALTIMORE & OHIO.—*Proposed Promissory Notes.*—The B. & O. has requested bids on proposed $1,059,750 issue of promissory notes, series G, subject to the approval of the Interstate Commerce Commission. The notes will be issued under a conditional sale agreement and assignment, dated January 1, 1945, and will mature in 30 consecutive equal quarterly installments, beginning July 1, 1945. The proceeds are to be applied to the purchase of fifteen 1,000-hp. Diesel-electric switching locomotives from the American Locomotive Company, deliveries of which are expected to begin in February, 1945.

CENTRAL OF NEW JERSEY.—*Tax Offer.*—On November 27, at a hearing on its tax problem in the United States district court at Newark, N. J., the Central of New Jersey offered to pay the state of New Jersey $11,560,622 in taxes for 1944 and prior years. The total includes $3,471,076 for all of 1944, and the balance in checks already on deposit with the state treasurer. The state claims the railroad owes approximately $25,000,000.

BOSTON & MAINE.—*Lease of Boston Office Building.*—Upon this road's petition, Division 4 of the Interstate Commerce Commission has dismissed its application for authority to enter into an agreement for the lease of the office and freight terminal building at North Station, Boston, finding the transaction not within its jurisdiction.

CHESAPEAKE & OHIO.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized this road to assume liability for $3,600,000 of its sixth equipment trust of 1944 1¼ per cent equipment trust certificates, sold to the Marine Midland Trust Co. of New York at 99.901, in connection with the purchase of 1,250 50-ton hopper cars and five 2-6-6-6 type freight locomotives at an aggregate cost of $4,658,373.

DELAWARE, LACKAWANNA & WESTERN.—*Merger of Leased Line.*—Division 4 of the Interstate Commerce Commission has authorized the merger of the Utica, Chenango & Susquehanna Valley into the Delaware, Lackawanna & Western, and in that connection has authorized the latter company to issue $3,703,900 of U. C. & S. V. division mortgage bonds, which are to be exchanged for an equal principal amount of the Utica line's stock in the hands of the public. The bonds are to bear fixed interest at 3 per cent, from May 1, 1942, and contingent interest at 2 per cent from a date to be set. The 2,961 shares of Utica stock held by the D. L. & W. will not participate in the bond exchange. The transaction is one of several undertaken by this road to simplify its corporate structure and clear up certain disputed tax liabilities in connection with its lease agreements for operating lines forming essential parts of its system. The Utica company owns 97.39 miles of line in New York, affording the Lackawanna access to Utica.

As a result of the merger, if approved by stockholders, the Utica company's stockholders will be relieved of possible liability for unpaid federal taxes in litigation, reimbursing the Lackawanna to the extent of one-half the expense of such settlement through its withhold contingent interest and sinking fund payments on the new bond issue. Under the rule of court decisions in comparable cases, the rental of $6 per share annually now paid the Utica by the Lackawanna is subject to federal taxes, reducing the net received per Utica share to $3.60, and in addition Utica shareholders may be held liable for accrued taxes. The Lackawanna, on the other hand, if the merger is consummated, will be relieved of this payment of $6 per share annually to Utica stockholders, through substitution of the bond issue bearing a lower interest rate, will acquire ownership of the Utica's property, and will bring the tax litigation to a conclusion. Outstanding intercompany accounts will be eliminated. Lackawanna's fixed charges will be reduced about $111,117 per year.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Reorganization Expenses.*—Maximum lim-

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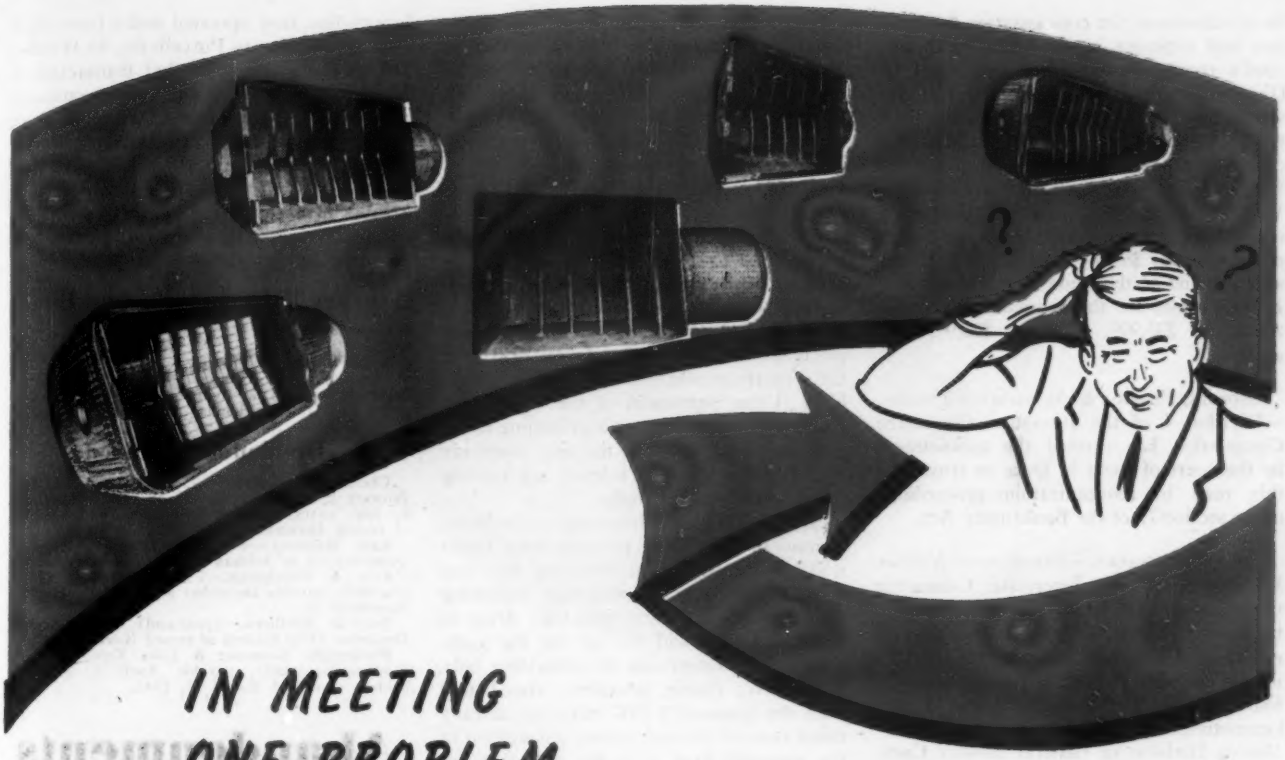

IN MEETING ONE PROBLEM

SECURITY CIRCULATORS

HAVE SOLVED SEVERAL OTHERS

THE demand for greater boiler horsepower, in the modern steam locomotive, has led to the construction of larger fireboxes. This in turn presented a problem of brick arch support, to meet which Security Circulators were primarily developed.

Security Circulators may be installed in any locomotive and permit the use, in any type of firebox, of a 100% arch, for which they provide the ideal support.

In addition to this, Security Circulators give the positive protection of a continual flow of water over the center of the crown sheet. Security Circulators also improve circulation in side water-legs.

Furthermore, Security Circulators tend to reduce honeycombing, flue plugging and cinder cutting.

AMERICAN ARCH COMPANY, INC.

NEW YORK • CHICAGO

SECURITY CIRCULATOR DIVISION

its of allowances for compensation for services and expenses in connection with this road's reorganization have been fixed by Division 4 of the Interstate Commerce Commission for the period from May 15, 1942, to the termination of the proceeding. Of claims for $54,415, the division approved $40,883. The largest claims were those of Willkie, Owen, Otis, Farr & Gallagher, counsel for the mortgage bonds protective committee, for $9,000, of which $8,000 was allowed, and of the same firm and Berle & Berle, counsel for the reorganization managers, for $35,909, of which $25,909 was allowed.

GEORGIA, FLORIDA & ALABAMA.—*Trustee.*—Division 4 of the Interstate Commerce Commission has ratified the appointment by the court of Leon S. Dure as trustee of this road in reorganization proceedings under section 77 of the Bankruptcy Act.

GREAT NORTHERN.—*Promissory Note.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue a $2,001,917 promissory note in evidence of, but not in payment for, the unpaid portion of the purchase price of four 5,400-hp. Diesel-electric road freight locomotives acquired from the Electro-Motive Division of General Motors Corp.

MISSOURI-KANSAS-TEXAS.—*R. F. C. Loan Retirement.*—This road has applied to the Interstate Commerce Commission for authority to pledge a portion of its series E prior lien mortgage 5 per cent bonds, due in 1975, as collateral for $2,000,000 in bank loans (maturing in 8 quarterly installments), obtained from four New York banks at 2 per cent, the proceeds to be applied, together with cash in the road's treasury, to the retirement at maturity of a $2,314,029 loan to the road by the Reconstruction Finance Corporation. In addition to other securities, $13,152,600 of the series F prior lien mortgage bonds have been pledged as security for the R. F. C. loan.

MISSOURI PACIFIC.—*Reorganization.*—The protective committee for common stockholders of the Missouri-Pacific has asked the federal district court at St. Louis, Mo., to provide for the issuance of purchase warrants in the pending plan of reorganization, which was approved by the Interstate Commerce Commission on July 4 and to which objections will be heard on January 8. Other changes asked by the committee include:

Full, instead of partial payment, of the River and Gulf bonds, and payment in cash instead of in cash and new securities of the claims of the Reconstruction Finance Corporation, of J. P. Morgan and Company and participating banks, and of the Railroad Credit Corporation.

Making the effective date of the plan January 1, 1940, instead of January 1, 1943.

A provision that a holder of securities of the debtor who is entitled to vote on the plan and who holds more than one class of securities, shall elect which class of holdings he votes on the rejection or acceptance of the plan and shall not vote his holdings in more than a single class.

A proposal that with the exception of the president of the new company, the names of all directors chosen under the plan shall be approved by the I. C. C., and that no approval shall be given any nominee in the employ of any corporation having an officer or employee acting as director of any railroad in competition with the reorganized company.

Elimination of the voting trust provided by the plan.

NEW YORK, CHICAGO & ST. LOUIS—*Bond Issue Authorized.*—On November 28, directors of the Nickel Plate authorized the sale, by competitive bidding, of $42,000,000 of 30-year bonds, to be issued under the railroad's refunding mortgage, under which there also are outstanding $59,875,000 of 4½ per cent bonds of 1978. The new bonds will provide for a sinking fund adequate to retire approximately 50 per cent of the bonds prior to maturity. Proceeds will be used to pay off the $26,058,000 of refunding 5½ per cent bonds of 1974, the $6,500,000 of Toledo, St. Louis & Western first mortgage 4 per cent bonds of 1950, and the recently-arranged $10,000,000 collateral loan. Upon retirement of the Toledo, St. Louis & Western bonds, the refunding mortgage will be a first and the only mortgage on all of the company's lines, aggregating approximately 1,688 miles.

Application for Interstate Commerce Commission authority to issue these bonds will be filed within the next few days and a date, probably immediately following the close of the sixth war loan drive in mid-December, will be set by the company for the submission of competitive bids.

John W. Davin, president, stated that with the company's 1947 maturity already taken care of through recent redemption of the extended first 3½s, the new issue of bonds now proposed will help to improve and simplify the road's debt structure and strengthen its financial position. Adherence to a policy of whittling away at the company's non-equipment debt during the eight-year period commencing January 1, 1937, he pointed out, has resulted in a reduction of $48,654,000 of this indebtedness, or 32 per cent. Non-equipment debt at the beginning of 1937 aggregated $151,000,000. The present non-equipment debt of $102,433,000, on completion of the refunding will be reduced to $101,875,000. In this eight-year period, annual interest charges were reduced from $7,500,000 in 1936 to approximately $5,300,000 in 1944, and, with the completion of the refunding, annual interest charges on debt then outstanding will be reduced below $5,000,000.

OKLAHOMA CITY-ADA-ATOKA.—*Lease.*—Division 4 of the Interstate Commerce Commission has authorized this road to enter into a modified lease agreement for the operation of a 13.56-mile line of the Missouri-Kansas-Texas from Coalgate, Okla., to Atoka.

SOUTHERN.—*Acquisition of Subsidiaries.*—Division 4 of the Interstate Commerce Commission has authorized this company to purchase the properties of three subsidiary companies—the Southern Railway in Kentucky, Southern Railway of Indiana, and Cumberland Railway—which it controls through ownership of all outstanding stock and bonds. Through dissolution of the subsidiaries simplification of system capital structure and some savings in taxes will be accomplished.

SOUTHERN-WASHINGTON & OLD DOMINION.—*Transfer of Ownership.*—Division 4 of the Interstate Commerce Commission has authorized the Washington & Old Dominion to purchase from the Southern the latter's branch line, now operated under lease, from Alexandria, Va., to Purcellville, 46.44 miles, and in connection with that transaction to issue $60,000 of 4½ per cent promissory notes for sale at par to the Arlington Trust Co., Arlington, Va. In addition to the proceeds of the notes, $10,000 is to be paid in cash from the company's treasury. The arrangement approved differs somewhat from that originally proposed, as noted in *Railway Age* of January 15, page 219.

Average Prices Stocks and Bonds

	Nov. 28	Last week	Last year
Average price of 20 representative railway stocks..	43.17	42.90	33.62
Average price of 20 representative railway bonds..	91.43	90.87	78.53

Dividends Declared

Chesapeake & Ohio.—75¢, quarterly, payable January 2, 1945, to holders of record December 8; 50¢, extra, payable December 26 to holders of record December 8.

East Mahanoy.—$1.25, semi-annually, payable December 15 to holders of record December 5.

Erie & Pittsburgh.—7% guaranteed, 87½¢, quarterly, payable December 9 to holders of record November 30.

Norfolk Southern.—(year-end) $1.00, payable December 11 to holders of record November 27.

Pittsburgh, Bessemer & Lake Erie.—common, 75¢, semi-annually, payable April 1, 1945, to holders of record March 15, 1945.

Abandonments

CHESAPEAKE & OHIO.—This company has applied to the Interstate Commerce Commission for authority to abandon a 0.98-mile segment line in the vicinity of Tamroy, W. Va.

SABINE & NECHES VALLEY.—This road has applied to the Interstate Commerce Commission for authority to abandon its entire line from Gist, Tex., to Deweyville, 11.76 miles, and to abandon operation under trackage rights over a Kansas City Southern line from Deweyville to Ruliff, 1.54 miles.

SEABOARD AIR LINE.—In a proposed report Examiner Jerome K. Lyle has recommended that the Interstate Commerce Commission authorize this road to abandon a branch from Tredegar, Ala., to Jacksonville, 3.26 miles, on the ground that it constitutes an unnecessary duplication of facilities. The application was opposed by the state Public Service Commission.

SPRINGFIELD & SOUTHWESTERN.—This road has applied to the Interstate Commerce Commission for authority to abandon its entire line from Springfield, Ill., to Curran, 7.33 miles, and to abandon operation under trackage rights over 0.37 mile of Baltimore & Ohio line in Springfield.

TEXAS & PACIFIC.—This company has applied to the Interstate Commerce Commission for authority to abandon a portion of a branch from Gordon Spur, La., to Simmesport, 11 miles.

VIRGINIAN.—Following the application of the Chesapeake & Ohio for Interstate Commerce Commission authority to abandon 0.98 mile of line at Tamroy, W. Va., this road has applied for authority to abandon operation over the same line.

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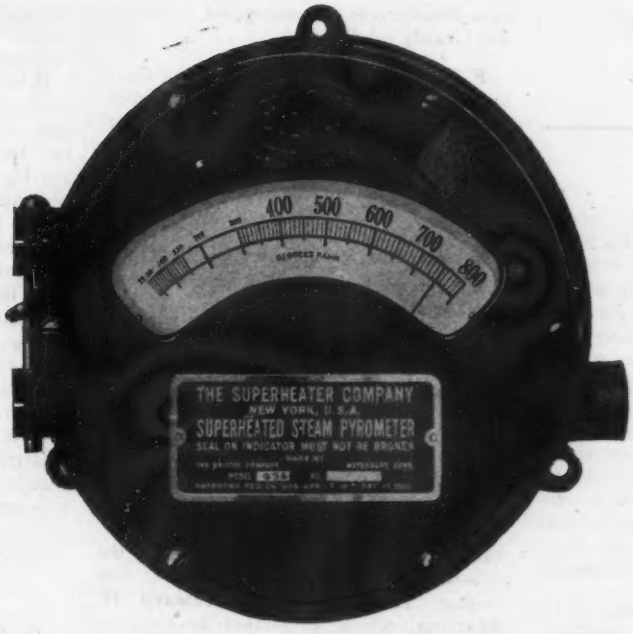

Superheated Steam *Provides*—

maximum steam volume and heat, which are responsible for high cylinder efficiency.

The Elesco small flue superheater is most effective in obtaining this result. It provides the largest superheating surface, free steam area and gas area.

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SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

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THE SUPERHEATER COMPANY, LTD.

Railway Officers

EXECUTIVE

G. F. Ashby, vice-president and assistant to the president of the Union Pacific at Omaha, Neb., has been promoted to executive vice-president, with the same headquarters. **E. C. Schmidt,** assistant to the president and head of the publicity department, has been advanced to executive assistant to the president, with headquarters as before at Omaha. **Paul Rigdon,** office assistant to the president and assistant secretary, has been promoted to acting vice-president, operations, and **L. J. Bachman** has been appointed assistant to the executive vice-president and assistant secretary of the company replacing Mr. Rigdon in the latter capacity, both with headquarters at Omaha.

J. E. Smither, chief clerk, office of the assistant to the president, of the Southern, has been appointed executive representative with headquarters at Washington, D. C.

A. J. Seitz, general freight traffic manager of the Union Pacific at Omaha, Neb., has been promoted to assistant vice-president, traffic, with the same headquarters, succeeding **L. T. Wilcox,** who has retired due to ill health.

FINANCIAL, LEGAL AND ACCOUNTING

Robert W. Purcell, acting general counsel of the Chesapeake & Ohio, has been promoted to general counsel, with headquarters as before at Cleveland, Ohio.

O. A. Bootwright, traveling auditor of the Chesapeake & Ohio at Richmond, Va., has been appointed general accountant, office of assistant comptroller, with the same headquarters, succeeding **W. R. Mozier,** who has retired.

John D. Seay, assistant auditor of the Southern at Atlanta, Ga., has been advanced to auditor succeeding **A. T. Martin,** whose appointment as employee relations officer in the accounting department is announced elsewhere in these columns. **Floyde L. Long,** chief clerk in the office of the assistant auditor, has been named chief traveling auditor with headquarters at Atlanta.

OPERATING

J. P. Kiley, trainmaster of the Chicago, Milwaukee, St. Paul & Pacific, at Green Bay, Wis., has been transferred to Portage, Wis.

I. H. Wildey has been appointed car accountant of the Seaboard Air Line with headquarters at Portsmouth, Va. The position of superintendent of car service has been abolished.

N. A. Levia has been appointed trainmaster of the Canadian National at Montreal, Que., with jurisdiction over St. Hyacinthe, St. Judes, Rouses Point, Massena Beauharnois, Hemmingford, Lemoyne, and Grandy subdivisions.

F. M. Maher, traveling car service agent of the Northern Pacific at Seattle, Wash., has been promoted to assistant superintendent of transportation, Western district, with the same headquarters, succeeding **J. L. Hurd,** who has retired after 43 years of service.

Ernest Ruf, trainmaster of the Union Pacific at Salina, Kan., has been promoted to terminal superintendent, with headquarters at Omaha, Neb., succeeding **Edward P. Conry,** who has been granted a leave of absence. **Edward T. Watson,** safety agent at Kansas City, Kan., has been advanced to trainmaster, with headquarters at Salina, replacing Mr. Ruf.

Stanley F. Dingle, superintendent of the Portage-Brandon division of the Canadian National at Winnipeg, Man., has been advanced to general superintendent of the Alberta district, with headquarters at Edmonton, Alta., succeeding **Howard H. Sparling,** whose promotion to chief of transportation, with headquarters at Montreal, Que., was reported in the *Railway Age* of November 11.

M. E. Collins, office assistant of the Northern Alberta (jointly owned by the Canadian Pacific and the Canadian National) at Edmonton, Alta., has retired after 43 years of service. **C. G. Dominy,** assistant superintendent at McLennan, Alta., has been named to succeed Mr. Collins as office assistant at Edmonton; and **J. H. Vollans,** yardmaster at Dunvegan, Alta., has been promoted to replace Mr. Dominy as assistant superintendent at McLennan.

C. D. Notgrass, division superintendent of the Atchison, Topeka & Santa Fe, who has been on leave of absence to serve in the armed forces, has returned to the Santa Fe as superintendent of the Eastern division, with headquarters at Emporia, Kan. Mr. Notgrass succeeds **H. C. Willis,** who has been transferred to the Northern division, with headquarters at Newton, Kan., where he replaces **O. H. Osborn,** who has been granted a leave of absence to enter military service.

G. R. Bowman, trainmaster of the Cleveland division of the New York, Chicago & St. Louis at Conneaut, Ohio, has been promoted to assistant superintendent of the Buffalo and Cleveland division, with the same headquarters, succeeding **E. F. Peters,** who has been granted a leave of absence to enter military service. **R. D. Werling** has been appointed trainmaster of the Ft. Wayne and Chicago divisions, with headquarters at Fort Wayne, Ind., replacing **E. B. Hunter,** who has been transferred to Conneaut, relieving Mr. Bowman.

A. Mosby Harris, whose promotion to superintendent of the Logansport division of the Pennsylvania, with headquarters, at Logansport, Ind., was reported in the *Railway Age* of November 18, was born at Dumbarton, Va., on August 7, 1907, and attended Virginia Polytechnic Institute from 1927 to 1931. He entered railway service on June 15, 1931, as an assistant on the engineering corps of the Pennsylvania at Washington, D. C., later being transferred to Baltimore, Md., and Tyrone, Pa. On April 9, 1934, he was promoted to assistant supervisor of track at Clayton, Del., and was later transferred successively to Harrington, Del., Wilmington, Downingtown, Pa., and Harrisburg. In May, 1937, Mr. Harris was advanced to supervisor of track at Olean, N. Y., and in February, 1938, he was assigned to special duty in the office of the chief engineer at Philadelphia. On April 1, 1939, he was appointed supervisor of track at Johnstown, Pa., and in June, 1941, he was advanced to assistant superintendent of freight transportation, Western region, at Chicago. On January 16, 1942, Mr. Harris was promoted to division engineer of the Renovo division, and on May 16, 1944, he was transferred to the Columbus division, remaining in that location until his new appointment.

TRAFFIC

G. W. Carleton, general agent of the Missouri Pacific at Denver, Colo., has been promoted to assistant general freight and passenger agent, with headquarters at Wichita, Kan. **J. N. Sanders,** division freight and passenger agent at Atchison, Kan., has been advanced to general agent, with headquarters at Denver, succeeding Mr. Carleton.

J. A. Prince, division freight agent of the Pennsylvania at Erie, Pa., has been promoted to New England freight agent, with headquarters at Boston, Mass. **John D. Finley,** district freight agent at San Francisco, Cal., has been advanced to division freight agent at Erie, succeeding Mr. Prince, and **William K. Chapman** has been appointed district freight agent at San Francisco, relieving Mr. Finley.

Noel B. Ballinger, district passenger agent of the Southern at Jacksonville, Fla., has been promoted to division passenger agent succeeding **G. R. Pettit,** whose retirement was announced in the *Railway Age* of November 18. **Charles L. Foster,** city passenger agent at Atlanta, Ga., succeeds Mr. Ballinger as district passenger agent at Jacksonville. **Bruce G. Cartwright,** district passenger agent at Chattanooga, Tenn., has been advanced to division passenger agent there, and **Kyle E. Epps,** city passenger agent at Knoxville, Tenn., has been named to succeed Mr. Cartwright as district passenger agent at Chattanooga.

Ray F. Clark, whose promotion to general freight agent of the Grand Trunk Western at Chicago was reported in the *Railway Age* of November 18, was born at Elburn, Ill., on August 31, 1881, and entered railway service on January 1, 1899, as an office boy in the general agent's office of the Chicago & North Western at Chicago. After advancing to soliciting freight agent, he resigned on August 11, 1911, to enter the employ of the Canadian Northern as traveling freight agent at Chicago which position he held until March 1, 1914, when he was promoted to general agent at Pittsburgh. On April 1, 1916, he was transferred

News Department continued on second left-hand page

HSGI *Wear Resisting* PARTS

Staying power is availability expressed in fight terms. Increased locomotive staying power figures mightily in fighting the battle of transportation. Without staying power, enough men, enough materials, could not have been carried to the places where they did the most good.

HUNT-SPILLER *Air Furnace* GUN IRON is a wear resisting and power conserving material that imparts staying power. HSGI equipped locomotives consistently deliver high monthly mileage with low maintenance cost. How many of the listed applications does your road use?

HSGI
Reg. U. S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings

Finished Parts
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings, All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

HUNT-SPILLER MFG. CORPORATION
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HUNT-SPILLER *Air Furnace* GUN IRON

They live on dreams

Rice. That's what our boys in the Japanese prison camps eat.

They get it for breakfast, garnished with taunts. For lunch, seasoned with threats. For dinner, covered with verbal abuse.

Twenty thousand Americans, day after day, week after week, month after month until they are liberated, will live on this fare. Twenty thousand—and more.

But it is more than rice that they live on. For they live on dreams. Dreams of hearing, one day, the guns of the American battle squadrons drawing nearer. Dreams of hearing in the sky the thunder of American planes. Dreams of hearing in the streets the shouts of American voices—liberating American voices.

For these twenty thousand the war will not end—barring a miracle—next month or the month after that or even by next spring or summer.

It *will* end sooner, however, if not a single one of us lets down. If every one of us fights and works and invests in War Bonds right up to the last minute. It's the only way to speed victory.

How many extra Bonds are *you* buying?

6th War Loan

BUY MORE THAN BEFORE

THIS ADVERTISEMENT CONTRIBUTED BY THE STEAM

DIVISION OF AMERICAN LOCOMOTIVE COMPANY

to Chicago and continued in that capacity with the Canadian National until November, 1929, when he was advanced to assistant general freight agent, the position he was holding at the time of his recent appointment.

John C. McMichael, whose promotion to general freight agent of the Pennsylvania, with headquarters at Chicago, was reported

John C. McMichael

in the *Railway Age* of November 18, was born on January 25, 1906. He graduated from the University of Pittsburgh in 1927 and entered railway service with the Pennsylvania on September 1, 1927, as a clerk. Mr. McMichael was advanced to chief clerk to the division freight agent at Cleveland, Ohio, subsequently serving in minor capacities at Rochester, N. Y., Indianapolis, Ind., and Cincinnati, Ohio. On October 1, 1942, he was advanced to assistant general freight agent with headquarters at Pittsburgh, Pa., holding that position until his new appointment, effective November 16.

Harold R. Sampson, passenger traffic manager of the Chicago & Eastern Illinois at Chicago, has been promoted to general traffic manager, with the same headquarters. Mr. Sampson was born at Washington, Ill.,

Harold R. Sampson

on December 6, 1897, and was graduated in 1922 from the James Milliken University, Decatur, Ill. He entered railroad service in June, 1922, as a stenographer in the engineering department of the Pennsylvania at Indianapolis, Ind., leaving after a few months to accept a similar position in the Illinois Central's passenger department at Chicago. In October, 1923, Mr. Sampson became an I. C. passenger representative at Minneapolis, Minn., and was ticket agent at Sioux City, Iowa, from March until May, 1924. In the latter month he was transferred back to Chicago where he served as general clerk in the general passenger office until May, 1927. Mr. Sampson then left the I. C. to become traveling passenger agent for the C. & E. I., a position which he retained until November, 1935, except for 1929-1931 when he was manager of that road's Chicago travel bureau. In November, 1935, Mr. Sampson became general agent, passenger department, and in July, 1938, he was promoted to general passenger agent. In June, 1942, he was given a six-month leave of absence to become assistant director of the division of traffic movement of the Office of Defense Transportation. He returned to the C. & E. I. in January, 1943, and two months later he was promoted to the position he held at the time of his new appointment.

Charles A. Sublett, whose promotion to general freight agent of the Illinois Central, with headquarters at Chicago, was reported in the *Railway Age* of November 25, was

Charles A. Sublett

born at Farina, Ill., on August 26, 1898, and received his higher education at Northwestern University. He entered railway service in June, 1915, as a freight clerk of the Illinois Central at Chicago, and three years later he was granted a leave of absence to serve in the armed forces during World War I. In February, 1921, Mr. Sublett returned to the I. C. as a clerk of the operating department, subsequently holding several minor positions until March, 1925, when he was promoted to traveling freight and passenger agent, with headquarters at Carbondale, Ill. In 1938 he was promoted to assistant general freight agent at Chicago, and in 1941 he was appointed office manager to the vice-president in charge of traffic, with the same headquarters. One year later Mr. Sublett was reappointed assistant general freight agent, holding that position until his new appointment.

Hugh Alvin Cline, assistant general passenger agent of the Southern at Washington, D. C., has been promoted to general passenger agent with the same headquarters, succeeding **W. C. Spencer,** whose appointment as general passenger agent at Chattanooga, Tenn., was announced in the *Railway Age* of November 4. **F. Kenneth Brown,** division passenger agent at Washington, has been named assistant general passenger agent there replacing Mr. Cline, and **R. W. Plemmons,** division passenger agent at Richmond, Va., has been transferred to Washington, succeeding Mr.

Hugh Alvin Cline

Brown. **J. L. Flautt,** district passenger agent at Birmingham, Ala., has been promoted to division passenger agent at Richmond to replace Mr. Plemmons. **T. B. Martin,** assistant general passenger agent at Knoxville, Tenn., has retired, and **J. D. McKelder,** division passenger agent there, has been named to succeed him, while **A. B. Cartwright,** district passenger agent, has been promoted to division passenger agent at Knoxville, replacing Mr. McKelder.

Mr. Cline, who was born at Washington on April 14, 1897, entered railroad service with the Southern as a messenger there on June 9, 1913, and became a clerk-stenographer in the office of the superintendent of freight transportation and assistant vice-president the following year. After serving with the United States Marines from May, 1918, to March, 1920, Mr. Cline rejoined the Southern as a clerk in the general passenger department at Washingon; and he remained in that post until he was appointed traveling passenger agent in July, 1925, serving in the latter capacity at St. Louis, Mo., and Washington. On March 1, 1929, Mr. Cline was named district passenger agent at Pittsburgh, Pa., subsequently transferring to Washington and Baltimore, Md. He returned to Washington as assistant general passenger agent on January 16 of this year, and remained in that post until his recent appointment as general passenger agent there.

K. G. Carlson, assistant traffic manager of the Union Pacific at Los Angeles, Cal., has been advanced to freight traffic manager, with headquarters at Omaha, Neb., replacing **W. T. Burns,** appointed general freight traffic manager at Omaha succeeding **A. J. Seitz,** whose appointment to assistant vice-president, traffic, is reported elsewhere in these columns. **J. W. Padden,** general agent, freight department, with headquar-

ters at Salt Lake City, Utah, has been promoted to assistant traffic manager at Los Angeles to succeed Mr. Carlson and has been succeeded by **H. G. Pelletier,** general agent at Fresno. **L. M. Layne,** general agent at Butte, Mont., has been transferred to Fresno to replace Mr. Pelletier and **J. D. Ford,** freight traffic agent at Salt Lake City, becomes general agent at Butte to succeed Mr. Layne.

C. E. Turner, commercial agent of the Missouri-Kansas-Texas at Portland, Ore., has been promoted to general agent, freight and passenger departments, with the same headquarters.

Ira **L. Fish,** division freight agent of the Reading at Harrisburg, Pa., has been furloughed to the Pennsylvania-Reading Seashore Lines as general freight and passenger agent at Camden, N. J.

PURCHASES AND STORES

Dudley E. Dawson, whose promotion to general storekeeper of the Gulf, Mobile & Ohio at Mobile, Ala., was reported in the *Railway Age* of November 11, was born at Mobile on December 20, 1892, and entered railway service on February 1, 1913, in the operating department of the Louisville & Nashville. In the same year he went with the Mobile & Ohio (now the Gulf, Mobile & Ohio), and in 1918 he was appointed chief clerk of the engineering department. In

Dudley E. Dawson

September, 1920, Mr. Dawson was appointed chief clerk of the stores department and later served as assistant storekeeper, storekeeper and traveling storekeeper, becoming tie and timber agent with headquarters at Mobile on August 1, 1942. On June 1, 1944, he was advanced to acting general storekeeper, with the same headquarters, the position he held at the time of his new appointment.

OBITUARY

John Brannen Sutton, general solicitor of the Atlantic Coast Line at Tampa, Fla., died there on November 24. Mr. Sutton, who was born at Lakeland, Fla., on March 15, 1891, received his LL. B. degree from the University of Florida in 1914. He entered railroading as local counsel of the Seaboard Air Line in 1917, and joined the Atlantic Coast Line as division counsel on January 1, 1923. He left that road on January 1, 1927, and then returned to it in the same capacity ten years later, on December 1, 1937. He served also as district counsel for the Seaboard Air Line from July 1, 1938, to March 29, 1939, when he was named general solicitor of the Atlantic Coast Line, the position he held at the time of his recent death.

W. H. Malcolm, who retired in 1942 as auditor of freight receipts of the Missouri Pacific, with headquarters at St. Louis, Mo., died in a hospital in that city recently.

Adolph L. Miller, assistant general passenger agent of the New York Central with headquarters at New York, died in a Bronxville, N. Y., hospital on November 23. He was 68 years old.

Harry B. Crane, assistant treasurer and assistant secretary of the Chicago, Indianapolis & Louisville, with headquarters at Chicago, died at his home in Western Springs, Ill., on November 23.

Charles Burton Packer, superintendent, car service, of the Seaboard Air Line at Portsmouth, Va., died November 11 in a Norfolk, Va., hospital. Mr. Packer was born at Mauch Chunk, Pa., on December 25, 1879, and entered railway service in 1895 as an office boy in the car accountant's office of the Lehigh Valley. After serving successively as record clerk, trace clerk, car distributor, and traveling car agent for that road, he joined the Seaboard Air Line in 1907 as chief per diem clerk. He became chief clerk to the car accountant in 1910 and was advanced to car accountant in 1913. Mr. Packer held the position of assistant superintendent of transportation from 1922 to 1926, when he was named superintendent, car service, in which post he remained until his recent death.

Albert T. Wade, general freight agent, solicitation, of the Louisville & Nashville at Louisville, Ky., died there on November 21. Mr. Wade was born at Calera, Ala., on August 24, 1890, and entered railroad service as cashier's clerk in the freight office of the Louisville & Nashville at Birmingham, Ala., on March 25, 1906. After serving in various clerical positions he was appointed city freight service agent there on March 1, 1920, and became traveling freight agent with headquarters at Jacksonville, Fla., two years later. Mr. Wade served as commercial agent at Mobile, Ala., from October, 1925, to November, 1931, when he was named general agent at Cincinnati, Ohio. He transferred to Pittsburgh, Pa., in April, 1935, and on March 1, 1936, he became division freight agent at Birmingham. The following month he was advanced to general freight agent, solicitation, with headquarters at Louisville, the position he held at the time of his recent death.

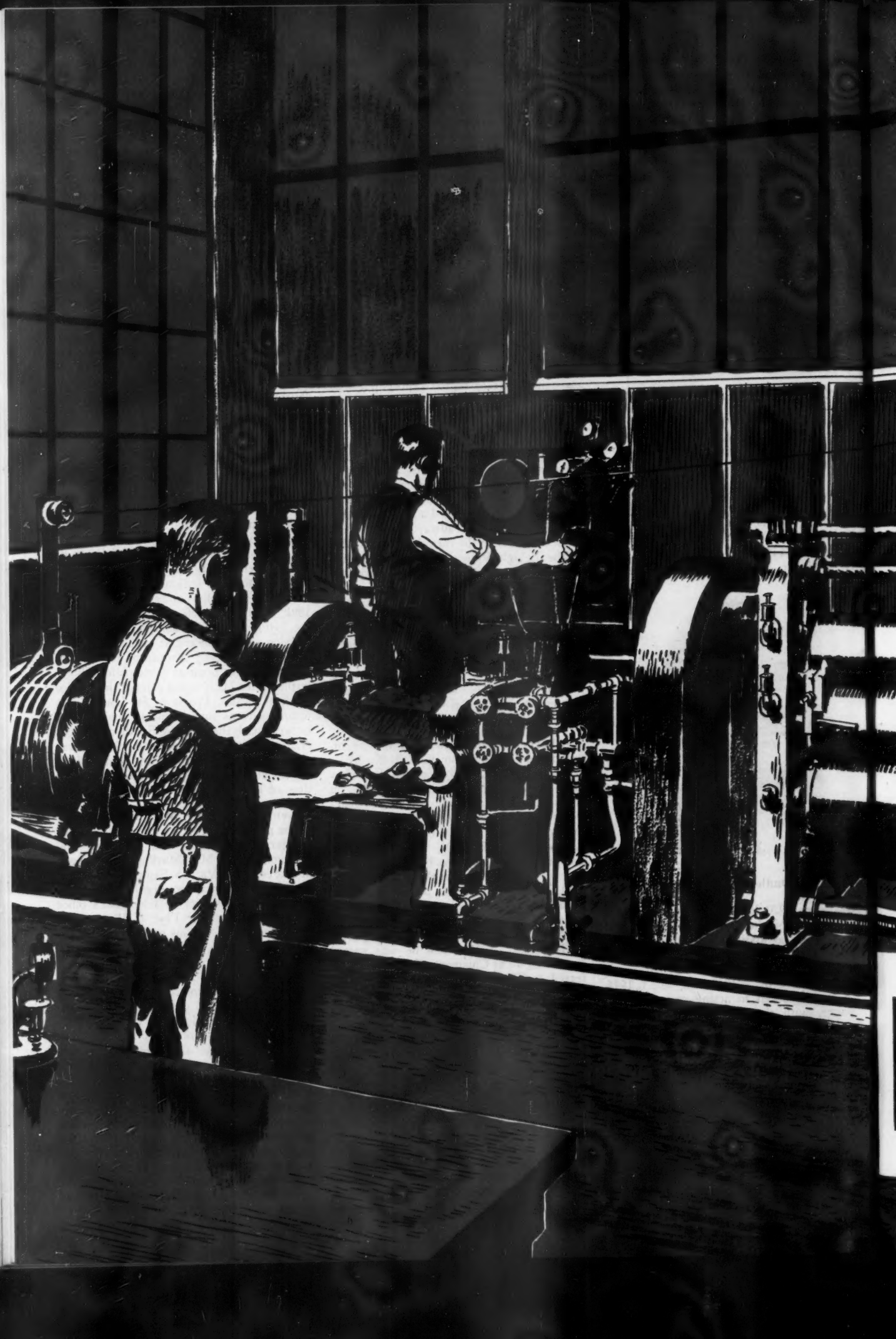
John H. Carroll, Jr., Western freight traffic manager of the Baltimore & Ohio, with headquarters at Chicago, died in an Evanston (Ill.) hospital on November 23. Mr. Carroll was born at Unionville, Mo., on January 1, 1891, and received his higher education at Princeton and Harvard. He entered railway service in September, 1915, in the general offices of the Great Northern at St. Paul, Minn., subsequently holding several minor positions with that road at St. Paul, Seattle, Wash., and Cincinnati, Ohio. He served as a captain in the army during World War I, returning to the Great Northern in 1919 as a general agent at St. Paul. In March, 1920, Mr. Carroll went with the B. & O., as assistant general freight agent, with headquarters at Philadelphia, Pa., and two years later he was advanced to general freight agent at that point. In 1924 he was transferred to Pittsburgh, and in December, 1930, he was promoted to freight traffic manager, with the same headquarters. In 1930 he was transferred to Chicago, and in 1933 he was advanced to the position he held at the time of his death.

Bennison Alexander Pinder, whose retirement as deputy auditor of disbursements of the Canadian Pacific was announced in the *Railway Age* of April 29, died in a hospital at Montreal, Que., on November 8. He was 60 years old.

Thomas Hart Pindell, retired chairman of the board of the Alton, whose death on November 9 was previously reported in the *Railway Age* of November 18, was born at Lexington, Ky., on December 4, 1859, and first entered railway service as a telegraph operator at the age of 15. He later became a Western Union telegraph operator at St. Louis, Mo., and in 1882 went with the Erie as a stenographer in the superintendent's office at Jersey City, N. J. Mr. Pindell was advanced through various positions until he was appointed division superintendent in 1891. In 1901 he left the Erie to go with the Lehigh Valley, which road he served as division superintendent at various locations until the failure of his health forced him to return to his home at Springfield. Shortly thereafter Mr. Pindell entered the service of the Chicago, Peoria & St. Louis (now partitioned) as superintendent, and in 1914 he went with the Alton & Southern as general manager. On December 4, 1936, he was elected president of the Alton and in 1938 he was elected to the position he held at the time of his retirement.

Lemuel Anthony Markham, assistant to the president of the Virginian with headquarters at Norfolk, Va., died there on November 27. Mr. Markham was born at Portsmouth, Va., on September 8, 1875, and entered railway service in September, 1892, as a messenger in the agent's office of the Seaboard Air Line at Portsmouth. After serving in various positions in station and yard service, he joined the Southern in October, 1904, as timekeeper, office of the superintendent, at Pinners Point, Va., and was later promoted to chief clerk to the roadmaster and chief clerk to the superintendent of that road. In July, 1910, Mr. Markham went with the Norfolk Southern as chief clerk to the general superintendent, remaining in that post until July, 1918, when he transferred to the Virginian as chief clerk to the general manager. The following year he was named representative, department of safety, becoming supervisor of safety shortly thereafter. Mr. Markham served as supervisor of wages from November, 1923, until February, 1928, when he was appointed assistant to the president, the position he held at the time of his recent death.

Table of Freight Operating Statistics appears on second left-hand page



THEY TAUGHT OIL AND RUBBER TO GET ALONG TOGETHER

When trains started chuffing their way across Western Deserts with the temperature 140 in the shade (and no shade), and puffing through mountain passes with the thermometer registering 40 below, a new problem faced air brake research engineers.

The leather brake cylinder packing used in the early days just couldn't hold air under these extremes of temperature. So Westinghouse Air Brake engineers did something about it.

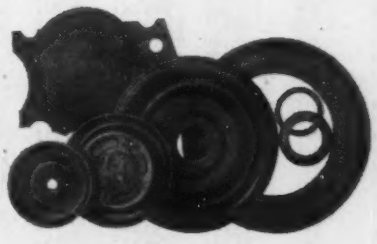
Rubber had the greatest promise . . . but it couldn't stand oil. The research department kept digging, and finally came up with a rubber compound that could live with oil and still retain its resilience, mechanical strength and sealing properties under all conditions.

The savings to the railroads from this one development have been incalculable.

75 Years of Pioneering

WESTINGHOUSE AIR BRAKE COMPANY, WILMERDING, PA.

Wabco packing cups and gaskets are produced in a complete range of types and sizes, to meet all normal railroad needs. They conserve air, reduce maintenance, and make a continuing saving through operating and replacement economies.



1869 1944

TO PERMIT TODAY'S TRAINS TO MOVE AT SHORTER INTERVALS WITH HEAVIER LOADS AT HIGHER SPEEDS—SAFELY.

Freight Operating Statistics of Large Steam Railways—Selected

Region, road and year		Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excl. locos. & tenders	Ton-miles (*thousands*): Net- rev. and non-rev.	Road locos. on line: Serviceable: Unstored	Road locos. on line: Serviceable: Stored	Road locos. on line: B. O.	Road locos. on line: Per cent B. O.
New England Region:													
Boston & Albany	1944	362	172,464	203,185	38,838	4,258	58.6	293,347	117,433	78	..	16	17.0
	1943	362	159,495	201,792	34,404	4,229	63.7	286,863	126,830	74	..	14	15.9
Boston & Maine	1944	1,807	373,608	426,126	40,791	13,848	67.9	895,590	403,474	154	..	23	13.0
	1943	1,807	402,712	470,025	53,909	14,118	65.9	933,437	418,428	154	..	20	11.5
N. Y., New H. & Hartf.†	1944	1,815	441,691	539,443	56,078	16,592	68.6	1,024,564	453,437	226	10	28	16.3
	1943	1,815	509,587	612,910	58,435	18,547	66.3	1,183,359	525,731	230	2	42	17.0
Great Lakes Region:													
Delaware & Hudson	1944	846	312,224	383,304	36,846	13,389	68.1	949,910	505,174	119	54	45	20.6
	1943	848	319,949	386,081	33,521	12,807	66.2	932,942	496,112	138	51	37	16.4
Del., Lack. & Western	1944	971	351,046	413,631	65,981	15,685	70.8	1,020,636	448,125	137	31	29	14.7
	1943	971	391,903	466,946	85,724	17,117	65.3	1,174,535	551,360	157	12	33	16.3
Erie	1944	2,244	902,094	970,160	82,095	43,286	68.2	2,791,077	1,217,245	319	18	62	15.5
	1943	2,244	1,044,420	1,123,693	86,741	47,640	64.6	3,186,789	1,402,030	314	5	81	20.3
Grand Trunk Western	1944	1,026	248,798	255,682	2,034	7,969	69.5	505,650	230,090	67	2	11	13.8
	1943	1,026	261,847	267,428	2,060	7,965	66.1	538,151	252,013	71	2	11	13.1
Lehigh Valley	1944	1,247	474,054	528,892	84,522	20,469	60.8	1,473,100	695,370	156	..	11	6.6
	1943	1,248	519,192	578,027	88,161	21,870	60.1	1,583,768	748,564	142	..	15	9.6
New York Central	1944	10,325	3,586,438	3,863,171	236,464	139,210	64.3	9,626,835	4,519,485	1,124	36	226	16.3
	1943	10,340	3,926,246	4,242,225	268,158	149,700	60.6	10,811,086	4,998,512	1,198	10	198	14.1
New York, Chi. & St. L.	1944	1,657	694,725	706,177	8,786	28,100	70.5	1,766,565	806,759	169	20	22	10.4
	1943	1,657	862,208	879,574	11,585	33,495	65.0	2,228,627	1,008,611	159	..	17	9.7
Pere Marquette	1944	1,915	410,727	423,243	10,639	14,146	65.7	956,987	450,820	145	2	19	11.4
	1943	1,949	462,001	478,714	12,143	14,760	61.0	1,045,740	480,217	139	1	23	14.1
Pitts. & Lake Erie	1944	229	89,301	94,638	34	3,966	68.3	331,284	199,477	32	..	13	28.9
	1943	231	94,672	99,733	61	4,207	64.5	367,773	219,917	34	2	12	25.0
Wabash	1944	2,381	726,379	752,084	17,621	26,326	72.6	1,665,653	778,948	173	3	42	19.3
	1943	2,381	772,319	796,482	19,034	28,884	70.9	1,876,265	888,659	181	6	36	16.1
Central Eastern Region:													
Baltimore & Ohio	1944	6,113	2,372,466	2,952,056	307,853	84,271	65.3	6,084,001	3,060,446	913	3	234	20.3
	1943	6,111	2,508,018	3,117,747	340,274	85,375	61.7	6,310,197	3,100,392	924	1	196	17.5
Central of New Jersey†	1944	655	224,385	265,779	54,151	8,478	62.8	623,127	311,234	116	11	27	17.5
	1943	657	269,900	310,985	67,059	8,826	60.7	646,080	330,747	137	3	17	10.8
Chicago & Eastern Ill.	1944	912	258,796	262,803	6,562	7,982	62.6	547,942	252,357	77	..	5	6.1
	1943	912	289,495	297,839	8,724	8,648	58.0	631,582	283,528	80	..	6	7.0
Elgin, Joliet & Eastern	1944	392	125,934	129,646	3,769	3,572	66.4	280,291	159,882	61	..	15	19.7
	1943	392	130,485	133,116	2,563	3,632	66.4	285,266	156,820	65	..	12	15.6
Long Island	1944	372	35,359	36,784	16,104	436	56.8	30,640	12,329	45	..	5	10.0
	1943	374	48,183	49,333	16,313	566	53.9	42,057	16,079	43	..	5	10.4
Pennsylvania System	1944	9,872	4,443,745	5,179,220	678,289	174,626	64.9	12,429,360	6,160,493	2,014	1	185	8.4
	1943	9,925	4,734,079	5,555,843	733,291	179,868	61.2	13,309,267	6,502,182	1,996	..	192	8.8
Reading	1944	1,409	586,704	651,112	80,388	19,105	66.1	1,434,930	784,577	269	13	46	14.0
	1943	1,416	580,203	653,347	83,239	18,694	64.2	1,440,008	781,602	274	13	44	13.3
Pocahontas Region:													
Chesapeake & Ohio	1944	3,032	1,084,554	1,173,594	55,967	51,830	58.2	4,457,019	2,589,530	427	19	67	13.1
	1943	3,027	1,118,609	1,208,983	55,370	52,517	56.4	4,588,610	2,630,506	420	2	68	13.9
Norfolk & Western	1944	2,132	761,745	807,029	52,227	35,510	59.5	3,069,281	1,663,048	291	25	18	5.4
	1943	2,132	774,805	826,800	61,491	35,539	57.9	3,133,743	1,719,163	300	24	14	4.1
Southern Region:													
Atlantic Coast Line	1944	4,952	887,684	897,869	12,285	24,265	67.8	1,580,453	732,242	369	15	28	6.9
	1943	4,947	899,176	919,197	11,303	24,658	65.5	1,659,884	769,219	344	21	26	6.6
Central of Georgia†	1944	1,783	318,527	324,639	5,436	7,682	68.9	502,510	232,490	93	..	15	13.9
	1943	1,783	319,195	328,238	5,348	7,478	69.2	488,458	225,453	105	..	10	8.7
Gulf, Mobile & Ohio	1944	1,941	271,123	342,750	1,937	10,002	76.4	627,924	312,375	102	5	11	9.3
	1943	1,962	340,288	433,879	2,630	11,451	67.8	763,057	363,937	110	1	13	10.5
Illinois Central (incl.	1944	6,347	1,657,759	1,668,986	31,408	64,808	63.1	4,513,237	2,105,212	643	..	59	8.4
Yazoo & Miss. Vy.)	1943	6,348	1,692,241	1,709,812	33,058	63,523	61.0	4,557,739	2,103,947	606	..	77	11.3
Louisville & Nashville	1944	4,734	1,530,118	1,651,103	42,269	40,342	65.1	2,864,424	1,480,230	394	17	71	14.7
	1943	4,736	1,556,423	1,699,424	45,053	39,847	62.2	2,926,304	1,492,886	420	8	57	11.8
Seaboard Air Line*	1944	4,161	810,757	882,622	18,318	23,859	69.3	1,558,260	728,170	315	1	27	7.9
	1943	4,164	807,556	942,587	15,274	22,561	67.7	1,495,296	688,717	296	8	38	11.1
Southern	1944	6,471	2,050,833	2,096,892	39,976	47,041	69.6	2,982,741	1,373,041	610	..	78	11.3
	1943	6,478	2,083,120	2,132,821	32,269	46,314	67.7	3,027,732	1,391,197	584	..	84	12.6
Northwestern Region:													
Chi. & North Western	1944	8,074	1,117,850	1,175,262	25,567	37,469	67.5	2,522,576	1,161,539	373	13	102	20.9
	1943	8,098	1,149,331	1,204,380	25,302	38,143	66.4	2,607,261	1,277,790	395	23	87	17.2
Chicago Great Western	1944	1,445	262,413	269,602	6,444	8,617	73.9	544,972	249,063	74	..	8	9.8
	1943	1,445	279,086	287,811	7,151	8,996	71.7	587,521	271,616	72	..	8	10.0
Chi., Milw., St. P. & Pac.†	1944	10,715	1,557,019	1,651,802	87,643	55,519	68.0	3,740,601	1,796,952	533	31	64	10.2
	1943	10,732	1,642,092	1,745,020	80,407	55,789	66.0	3,864,386	1,847,133	526	22	71	11.5
Chi., St. P. Minneap. & Om.	1944	1,606	214,067	233,915	12,595	5,821	71.5	386,975	179,679	94	26	11	8.4
	1943	1,606	239,398	255,379	13,374	6,415	68.7	444,078	211,779	93	25	11	8.5
Duluth, Missabe & I. R.	1944	547	162,594	163,269	1,214	8,898	50.9	830,532	508,832	54	..	..	..
	1943	543	191,717	192,786	1,501	10,385	51.2	972,664	600,762	60	..	2	3.2
Great Northern	1944	8,276	1,365,144	1,368,874	56,977	55,197	64.9	4,065,879	2,028,211	433	10	39	8.1
	1943	8,214	1,318,076	1,321,612	57,051	53,257	67.2	3,866,189	1,987,752	402	11	52	11.2
Min., St. P. & S. St. M.	1944	4,259	466,448	478,411	7,480	13,311	64.0	954,269	463,316	129	2	6	4.4
	1943	4,258	482,455	494,689	10,599	13,381	63.1	696,312	468,232	128	..	6	4.5
Northern Pacific	1944	6,571	1,022,208	1,094,969	83,616	44,756	71.8	3,001,629	1,486,075	375	12	62	13.8
	1943	6,572	1,020,107	1,092,516	83,564	43,303	72.7	2,884,241	1,439,670	369	19	50	11.4
Central Western Region:													
Alton†	1944	915	266,506	283,943	782	7,482	72.3	487,099	234,153	74	1	4	5.1
	1943	915	265,910	277,310	268	7,041	66.4	478,925	265,762	69	1	7	9.1
Atch., Top. & S. Fe (incl.	1944	13,093	3,421,393	3,657,588	204,506	128,806	67.2	8,406,371	3,429,483	856	2	122	12.4
G. C. & S. F. & P. & S. F.)	1943	13,148	3,114,755	3,379,727	203,685	107,101	65.3	7,263,932	2,935,872	827	..	99	10.7
Chi., Burl. & Quincy	1944	8,791	1,521,470	1,606,351	53,146	59,746	67.1	3,981,284	1,835,648	473	..	72	13.2
	1943	8,833	1,568,673	1,652,238	53,595	56,885	64.0	3,950,070	1,808,947	484	..	61	11.2
Chi., Rock I. & Pac.†	1944	7,718	1,331,150	1,389,914	10,858	42,038	70.5	2,678,520	1,221,010	397	..	73	15.5
	1943	7,718	1,302,267	1,378,918	14,750	38,280	69.5	2,508,926	1,155,033	405	..	62	13.3
Denver & R. G. Wn.†	1944	2,388	528,630	595,975	91,184	19,113	77.0	1,158,564	537,739	184	2	40	17.7
	1943	2,405	511,268	596,661	92,571	18,384	73.7	1,151,070	533,710	190	1	38	16.6
Southern Pacific—Pac. Lines	1944	8,193	2,300,475	2,642,311	422,170	99,063	69.2	6,435,820	2,725,225	858	..	123	12.5
	1943	8,211	2,259,190	2,544,119	381,888	93,243	68.4	6,086,774	2,583,871	796	2	151	15.9
Union Pacific	1944	9,782	3,201,799	3,409,751	275,777	131,543	71.8	8,153,127	3,533,062	840	14	63	6.9
	1943	9,798	3,188,899	3,389,335	296,406	122,175	68.4	7,829,089	3,398,137	854	..	51	5.6
Southwestern Region:													
Mo.-Kans.-Texas Lines	1944	3,241	651,438	670,010	11,108	18,311	63.9	1,221,823	543,316	156	..	17	9.8
	1943	3,281	809,964	833,644	15,859	21,994	63.2	1,453,696	645,683	160	..	16	9.1
Missouri Pacific†	1944	7,071	1,658,390	1,709,874	40,711	57,965	66.2	3,965,290	1,810,956	467	1	70	13.0
	1943	7,071	1,844,251	1,916,385	44,839	62,306	62.3	4,403,061	1,993,066	479	3	74	13.3
Texas & Pacific	1944	1,882	447,521	447,521	7,515	15,297	64.1	1,023,235	434,949	135	14	9	5.7
	1943	1,882	372,346	372,346	8,157	11,705	66.8	791,683	329,596	113	16	10	7.2
St. Louis-San Francisco†	1944	4,616	1,044,259	1,135,333	26,026	26,526	68.0	1,739,179	795,575	318	..	30	8.6
	1943	4,634	1,138,910	1,204,802	26,936	27,079	61.6	1,884,215	820,023	333	..	26	7.2
St. Louis-San Fran. & Texas	1944	159	32,494	33,890	8	506	67.6	32,525	13,597	8	..	1	11.1
	1943	159	34,651	35,613	10	489	61.3	33,929	14,236	9	..	1	10.0
St. Louis Southw. Lines†	1944	1,600	455,152	463,047	6,306	17,109	70.9	1,065,214	496,259	112	3	25	17.9
	1943	1,600	533,399	541,554	7,659	17,007	63.9	1,129,302	488,564	113	3	22	15.9
Texas & New Orleans	1944	4,333	1,146,558	1,149,190	47,569	29,913	64.6	1,994,787	868,293	268	..	16	5.6
	1943	4,339	1,187,695	1,199,397	35,962	31,042	60.5	2,159,901	910,053	257	1	23	8.2

* Report of receivers.
† Report of trustee or trustees.

Items for the Month of September 1944 Compared with September 1943

Region, road and year		Freight cars on line: Home	Foreign	Total	Per Cent B. O.	G.t.m. per train-hr. excl.locos. and tenders	G.t.m. per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc. loco.	Mi. per loco. per day
New England Region:														
Boston & Albany	1944	338	6,335	6,673	0.4	25,378	1,709	684	27.6	559	37.1	10,813	178	94.4
	1943	421	5,673	6,094	0.6	27,393	1,809	800	30.0	689	36.1	11,679	179	95.3
Boston & Maine	1944	2,209	10,706	12,915	3.2	36,856	2,408	1,085	29.1	1,041	52.6	7,443	93	91.5
	1943	2,380	10,067	12,447	2.4	35,427	2,324	1,042	29.6	1,077	55.1	7,719	93	103.8
N. Y., New H. & Hartf.†	1944	3,555	20,463	24,018	4.5	32,945	2,358	1,044	27.3	626	33.4	8,328	96	79.9
	1943	3,775	24,233	28,008	2.2	33,779	2,358	1,048	28.3	661	35.2	9,655	98	90.8
Great Lakes Region:														
Delaware & Hudson	1944	3,396	6,368	9,764	2.5	51,687	3,058	1,626	37.7	1,729	67.3	19,904	99	67.2
	1943	3,847	5,990	9,837	3.2	48,038	2,930	1,558	38.7	1,700	66.2	19,501	98	66.7
Del., Lack. & Western	1944	5,474	13,141	18,615	2.8	42,227	2,936	1,404	31.1	878	39.8	16,757	113	88.2
	1943	6,086	12,815	18,901	2.8	42,628	3,060	1,436	32.2	935	44.4	18,928	117	97.8
Erie	1944	7,051	31,058	38,109	2.9	50,549	3,108	1,356	28.1	1,045	54.5	18,081	89	95.0
	1943	10,178	26,690	36,868	2.4	50,232	3,064	1,348	29.4	1,287	67.7	20,826	90	108.3
Grand Trunk Western	1944	4,486	5,629	10,115	4.0	42,296	2,046	931	28.9	812	40.5	7,475	79	115.4
	1943	2,341	6,261	8,602	3.8	42,531	2,063	966	31.6	956	45.7	8,188	82	117.2
Lehigh Valley	1944	6,323	22,539	28,862	1.6	50,893	3,214	1,517	34.0	823	39.9	18,588	102	128.9
	1943	6,484	20,256	26,740	1.7	52,427	3,136	1,482	34.2	915	44.5	19,994	101	148.3
New York Central	1944	45,183	104,876	150,059	2.7	43,062	2,715	1,275	32.5	1,019	48.8	14,591	99	109.8
	1943	48,531	101,447	149,978	2.7	43,525	2,790	1,290	33.4	1,093	54.0	16,114	94	118.6
New York, Chi. & St. L.	1944	2,531	13,379	15,910	2.0	48,258	2,555	1,167	28.7	1,838	90.8	16,229	85	123.2
	1943	3,640	13,757	17,397	2.4	49,091	2,601	1,177	30.1	1,920	98.1	20,290	82	176.7
Pere Marquette	1944	2,328	9,936	12,264	2.5	40,388	2,352	1,108	31.9	1,226	58.5	7,847	86	92.4
	1943	2,701	7,931	10,632	2.8	38,560	2,292	1,052	32.5	1,412	71.2	8,213	85	108.1
Pitts. & Lake Erie	1944	3,720	9,023	12,743	4.2	51,124	3,714	2,236	50.3	518	15.1	29,036	92	77.5
	1943	3,664	9,934	13,598	3.7	52,750	3,888	2,325	52.3	589	17.5	31,734	82	76.1
Wabash	1944	6,090	12,735	18,825	4.0	44,895	2,314	1,082	29.6	1,385	64.5	10,905	104	121.8
	1943	7,205	14,318	21,523	1.7	46,006	2,456	1,163	30.8	1,421	65.1	12,441	100	126.6
Central Eastern Region:														
Baltimore & Ohio	1944	39,078	60,973	100,051	3.3	31,085	2,622	1,319	36.3	1,035	43.6	16,688	140	97.6
	1943	40,256	55,769	96,025	2.5	31,854	2,572	1,264	36.3	1,074	47.9	16,912	136	107.6
Central of New Jersey†	1944	6,815	13,908	20,723	3.3	33,690	2,788	1,393	36.7	490	21.3	15,839	115	92.1
	1943	4,081	21,045	25,126	1.8	28,027	2,442	1,235	37.5	437	19.2	16,781	130	106.2
Chicago & Eastern Ill.	1944	2,067	4,412	6,479	4.8	37,389	2,181	1,005	31.6	1,255	63.4	9,224	109	111.6
	1943	1,981	4,882	6,863	3.2	38,771	2,220	996	32.8	1,285	67.6	10,363	111	120.9
Elgin, Joliet & Eastern	1944	9,227	6,456	15,683	2.5	18,598	2,365	1,349	44.8	345	11.6	13,595	128	83.1
	1943	8,381	6,715	15,096	4.3	18,019	2,297	1,263	43.2	346	12.1	13,335	123	84.5
Long Island	1944	43	5,548	5,591	.4	6,622	893	359	28.3	71	4.4	1,105	275	51.5
	1943	27	5,419	5,446	.8	7,553	902	345	28.4	97	6.3	1,433	299	63.7
Pennsylvania System	1944	119,919	117,072	236,991	3.7	39,369	2,884	1,429	35.3	857	37.4	20,801	114	96.3
	1943	118,983	110,133	229,116	3.6	38,216	2,899	1,416	36.1	920	41.6	21,838	116	104.0
Reading	1944	12,120	26,949	39,069	1.8	31,367	2,447	1,338	41.1	670	24.7	18,561	112	86.3
	1943	10,933	24,168	35,101	2.0	30,928	2,489							
Pocahontas Region:								1,351	41.8	729	27.1	18,399	117	84.0
Chesapeake & Ohio	1944	36,658	18,820	55,478	1.7	58,021	4,171	2,423	50.0	1,602	55.1	28,469	74	87.2
	1943	37,080	18,502	55,582	1.0	57,483	4,143	2,375	50.1	1,580	56.0	28,967	71	92.7
Norfolk & Western	1944	31,115	7,908	39,023	1.7	63,469	4,078	2,210	46.8	1,410	50.6	26,001	85	93.3
	1943	31,213	7,153	38,366	1.6	63,348	4,121	2,261	48.4	1,504	53.7	26,879	85	95.2
Southern Region:														
Atlantic Coast Line	1944	7,380	17,594	24,974	1.8	30,022	1,794	831	30.2	1,018	49.8	4,929	105	78.5
	1943	8,148	17,221	25,369	3.0	30,293	1,854	859	31.2	960	47.0	5,183	106	85.1
Central of Georgia†	1944	1,775	6,374	8,149	1.9	29,519	1,589	735	30.3	903	43.3	4,346	125	109.0
	1943	2,520	5,855	8,375	1.4	28,022	1,554	717	30.1	863	41.3	4,215	121	102.5
Gulf, Mobile & Ohio	1944	1,940	6,881	8,821	.7	39,091	2,322	1,155	31.2	1,176	49.3	5,365	112	102.0
	1943	2,493	6,926	9,419	.7	39,600	2,252	1,074	31.8	1,258	58.4	6,183	112	123.2
Illinois Central (incl. Yazoo & Miss. Vy.)	1944	17,991	36,562	54,553	1.0	43,880	2,785	1,299	32.5	1,267	61.8	11,056	103	84.2
	1943	18,886	30,931	49,817	1.1	42,703	2,757	1,273	33.1	1,374	68.0	11,048	103	89.4
Louisville & Nashville	1944	27,921	15,174	43,095	3.4	29,608	1,872	967	36.7	1,137	47.6	10,423	121	121.8
	1943	31,276	15,650	46,926	3.0	28,445	1,880	959	37.5	1,088	46.6	10,507	122	126.9
Seaboard Air Line*	1944	6,053	16,608	22,661	2.0	33,091	1,955	914	30.5	1,072	50.7	5,833	118	96.0
	1943	7,306	15,320	22,626	1.5	31,474	1,883	867	30.5	1,000	48.4	5,513	113	101.1
Southern	1944	16,133	35,394	51,527	2.1	24,613	1,477	680	29.2	897	44.2	7,073	143	108.3
	1943	16,084	30,497	46,581	2.0	25,224	1,474	677	30.0	997	49.1	7,159	139	112.8
Northwestern Region:														
Chi. & North Western	1944	21,302	33,846	55,148	2.9	35,259	2,341	1,078	31.0	693	31.1	4,795	113	88.9
	1943	21,185	34,111	55,296	3.9	34,648	2,353	1,153	33.5	780	35.1	5,260	113	88.1
Chicago Great Western	1944	941	4,711	5,652	2.0	36,329	2,083	952	28.9	1,458	68.3	5,745	120	118.1
	1943	1,154	5,198	6,352	1.2	37,580	2,114	977	30.2	1,474	68.1	6,266	112	128.7
Chi., Milw., St. P. & Pac.†	1944	23,238	32,269	55,507	1.8	37,828	2,422	1,164	32.4	1,064	48.3	5,590	110	101.0
	1943	24,652	32,183	56,835	1.3	35,580	2,372	1,134	33.1	1,107	50.6	5,737	112	107.4
Chi., St. P. Minneap. & Om.	1944	799	6,641	7,440	5.6	25,561	1,852	860	30.9	780	35.4	3,729	101	65.3
	1943	1,360	7,135	8,495	5.7	27,246	1,924	918	33.0	819	36.1	4,396	106	71.3
Duluth, Missabe & I. R.	1944	15,192	477	15,669	2.5	89,982	5,250	3,216	57.2	1,081	37.1	31,007	57	117.8
	1943	15,033	401	15,434	2.2	86,321	5,204	3,214	57.8	1,307	44.1	36,879	59	127.8
Great Northern	1944	22,024	25,569	47,593	1.7	44,806	3,003	1,498	36.7	1,477	61.9	8,169	87	106.7
	1943	23,301	20,733	44,034	2.2	44,403	2,960	1,522	37.3	1,479	59.0	8,067	87	106.7
Min., St. P. & S. St. M.	1944	6,216	7,739	13,955	2.6	34,952	2,063	1,002	34.8	1,078	48.4	3,626	86	122.0
	1943	6,905	7,057	13,962	3.0	34,407	2,026	979	35.0	1,122	50.9	3,666	86	127.7
Northern Pacific	1944	16,426	23,433	39,859	2.6	44,110	2,949	1,460	33.2	1,242	52.1	7,539	121	94.5
	1943	18,063	17,811	35,874	3.5	42,915	2,846	1,421	33.2	1,356	56.1	7,302	120	96.5
Central Western Region:														
Alton†	1944	1,665	7,160	8,825	2.9	39,317	1,839	884	31.3	860	38.0	8,530	110	127.8
	1943	1,023	7,277	8,300	3.0	38,934	1,819	1,009	37.7	1,081	43.1	9,682	116	126.8
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1944	42,669	51,397	94,066	2.6	44,789	2,471	1,008	26.6	1,203	67.2	8,731	107	136.1
	1943	47,621	42,791	90,412	2.8	40,099	2,348	949	27.4	1,087	60.7	7,443	110	134.8
Chi., Burl. & Quincy	1944	16,790	32,410	49,200	1.9	42,363	2,632	1,213	30.7	1,251	60.7	6,960	109	107.9
	1943	15,681	32,424	48,105	2.3	39,634	2,531	1,159	31.8	1,238	60.8	6,826	99	111.4
Chi., Rock I. & Pac.†	1944	9,671	23,756	33,427	3.3	35,802	2,027	924	29.0	1,201	58.6	5,273	105	104.0
	1943	12,089	20,110	32,199	3.6	33,350	1,941	894	30.2	1,165	55.5	4,988	114	104.8
Denver & R. G. Wn.†	1944	7,417	10,589	18,006	3.3	33,017	2,218	1,030	28.1	978	45.1	7,506	161	106.1
	1943	7,998	11,691	19,689	2.4	30,613	2,284	1,059	29.0	926	43.3	7,397	164	105.8
Southern Pacific—Pac. Lines	1944	25,126	63,588	88,714	2.4	38,059	2,820	1,194	27.5	1,049	55.1	11,088	99	109.3
	1943	26,137	59,829	85,966	2.3	37,133	2,714	1,152	27.7	994	52.4	10,489	99	107.7
Union Pacific	1944	26,961	46,027	72,988	2.3	48,602	2,570	1,114	26.9	1,647	85.4	12,039	119	140.6
	1943	27,416	48,616	76,032	2.2	41,728	2,482	1,077	27.8	1,489	78.2	11,561	114	141.8
Southwestern Region:														
Mo.-Kans.-Texas Lines	1944	1,489	7,107	8,596	.6	33,298	1,882	837	29.7	1,927	101.7	5,588	79	137.3
	1943	2,323	7,002	9,325	1.0	33,610	1,805	802	29.4	2,231	120.2	6,560	81	168.1
Missouri Pacific†	1944	10,719	29,262	39,981	1.5	39,862	2,404	1,098	31.2	1,510	73.0	8,537	102	114.9
	1943	10,618	33,874	44,492	1.3	40,120	2,399	1,086	32.0	1,486	74.5	9,396	109	125.4
Texas & Pacific	1944	1,582	8,033	9,615	1.3	41,996	2,299	977	28.4	1,553	85.2	7,704	85	106.5
	1943	1,435	6,522	7,957	1.1	40,458	2,162	900	28.2	1,416	75.3	5,838	86	96.1
St. Louis-San Francisco†	1944	5,852	13,467	19,319	1.9	32,226	1,672	765	30.0	1,362	66.8	5,745	128	115.9
	1943	7,722	12,599	20,321	3.0	32,247	1,663	724	30.3	1,325	71.0	5,899	126	120.1
St. Louis-San Fran. & Texas	1944	....	280	280	12.9	19,966	1,007	421	26.9	1,566	86.1	2,851	120	128.4
	1943	....	269	269	9.3	19,958	983	412	29.1	1,571	88.1	2,984	126	116.3
St. Louis Southw. Lines†	1944	1,087	7,128	8,215	.8	39,229	2,349	1,094	29.0	2,092	101.7	10,339	78	118.1
	1943	1,394	6,539	7,933	.7	34,489	2,126	920	28.7	1,999	108.9	10,178	82	138.2
Texas & New Orleans	1944	3,747	18,867	22,614	2.4	30,706	1,756	764	29.0	1,312	69.9	6,680	92	145.2
	1943	4,292	21,021	25,313	2.4	32,096	1,835	773	29.3	1,189	67.0	6,991	87	153.2

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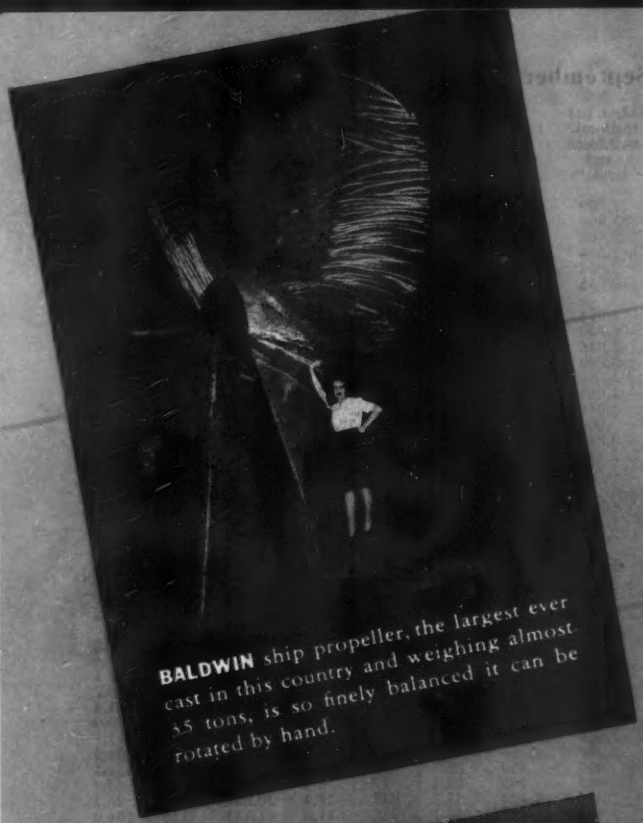
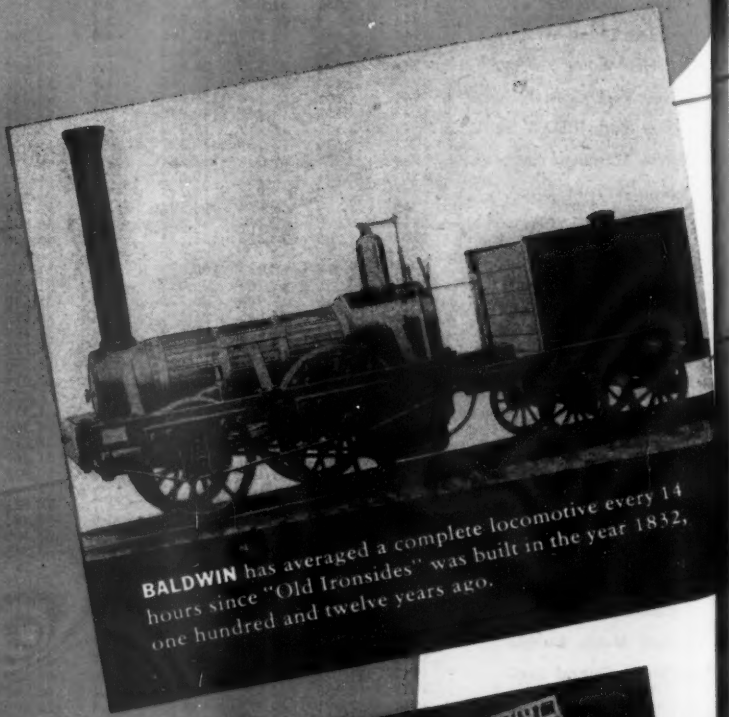


BALDWIN ship propeller, the largest ever cast in this country and weighing almost 55 tons, is so finely balanced it can be rotated by hand.



BALDWIN has averaged a complete locomotive every 14 hours since "Old Ironsides" was built in the year 1832, one hundred and twelve years ago.

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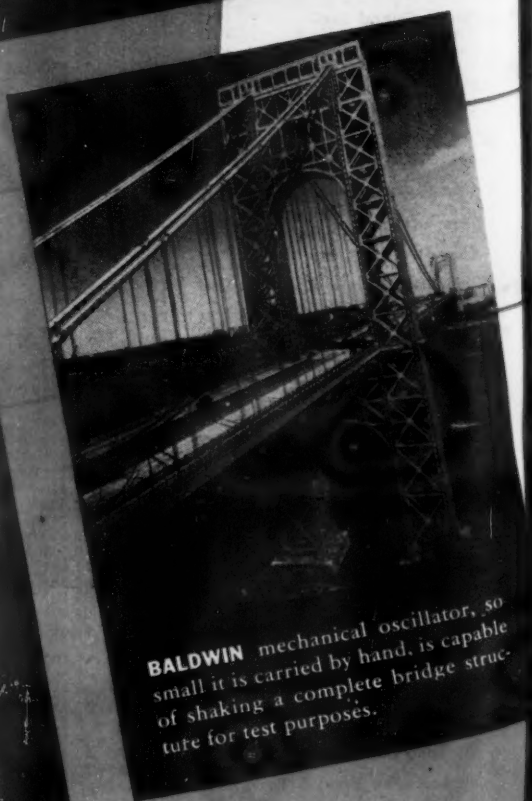

BALDWIN mechanical oscillator, so small it is carried by hand, is capable of shaking a complete bridge structure for test purposes.

BALDWIN builds powerful hydraulic presses used to form radio cabinets and other plastic parts.

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Write for Baldwin Products Catalogue 211, addressing your request to Advertising Department, Room 725, The Baldwin Locomotive Works, Philadelphia 42, Pa.

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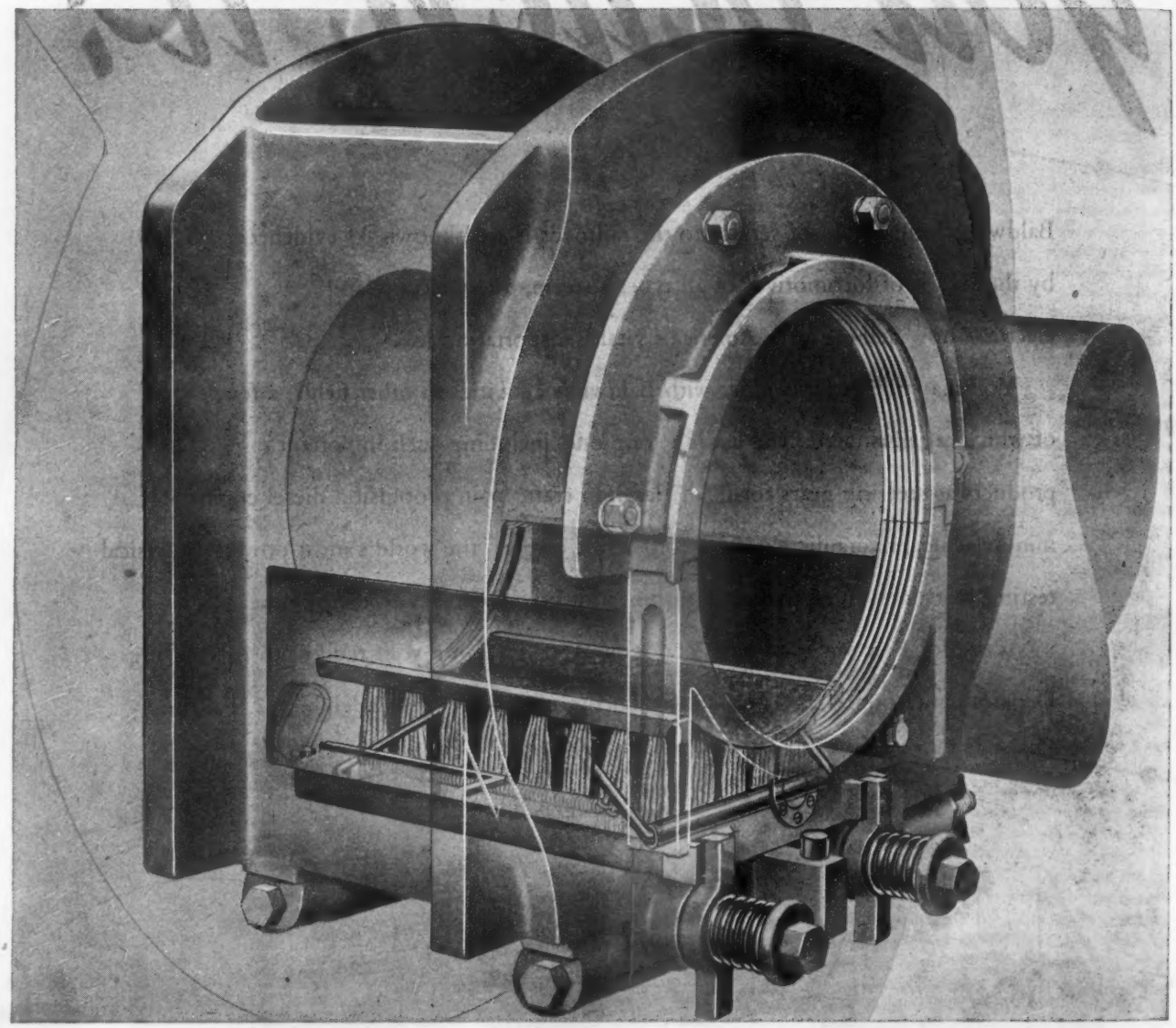
THE NATION WHICH THE RAILROADS HELPED TO BUILD

MAGNUS OIL LUBRICATION *for* Locomotive Journals



All the advantages of oil lubrication are fully utilized by Magnus Oil Lubrication for Locomotive Journals.

1. Assures plentiful supply of oil through an oil pad held against the journal, fed by absorbent wicking.
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2¾% Nickel Steel locomotive rods, one bent cold to show ductility.

QUENCHED AND TEMPERED

NICKEL STEEL

FORGINGS COMBINE

EXCEPTIONAL DUCTILITY

WITH

HIGH TENSILE STRENGTH

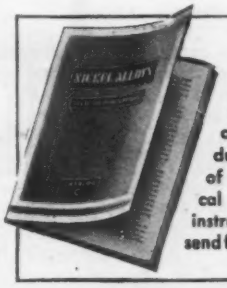
Composition and Typical Properties of Normalized Quenched and Tempered 2¾% Nickel Steel Rods

Description or Size	Melt Yield Pt. No. #s per Sq. In.	Tensile Strength #s per Sq. In.	Elong. % in 2 In.	Reduction in Area %	ANALYSIS					
					Car.	Mang.	Phos.	Sul.	Sil.	Ni
Main Rod....	92900	110000	25.0	64.4	.31	.78	.027	.026	.25	2.75
Main Rod....	86500	104500	25.5	65.6	.32	.86	.034	.032	.29	2.69
Main Rod....	86360	104400	26.0	64.8	.32	.86	.034	.032	.29	2.69
Main Rod....	87850	102350	26.0	66.2	.31	.89	.037	.025	.32	2.69
Front Rod....	86000	102250	25.0	67.3	.29	.82	.035	.027	.24	2.71
Front Rod....	83900	104250	25.0	66.1	.29	.82	.035	.027	.24	2.71
Front Rod....	86850	104250	27.0	66.1	.32	.86	.035	.025	.30	2.65
Front Rod....	89500	107050	25.5	65.6	.32	.86	.035	.025	.30	2.65
Back Rod....	89500	107650	25.0	62.7	.30	.79	.030	.025	.22	2.71
Back Rod....	87500	106450	25.0	65.4	.29	.82	.035	.027	.24	2.71
Back Rod....	87000	105600	25.0	65.4	.29	.82	.035	.027	.24	2.71
Back Rod....	88150	104850	26.0	66.8	.29	.82	.035	.027	.24	2.71

Specimens Taken from Mid-Section of Prolongations of the Forgings

The above table compiled by the American Locomotive Company shows the chemical compositions and mechanical properties of some normalized, quenched and tempered nickel steel front, main and back rods recently produced as replacement rods for locomotives being speeded up and rebalanced. These values are typical of replacement rod forgings recently tested by that company.

Quenched and tempered nickel steel forgings provide high tensile strength and ductility, combined with unusual toughness and high fatigue strength—qualities which tend to obviate breakage and assure long, trouble-free service when employed in heavy duty machinery and equipment.



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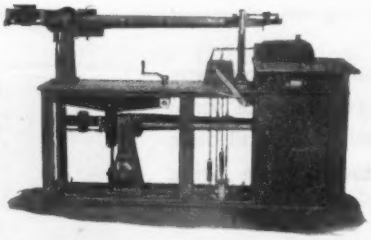

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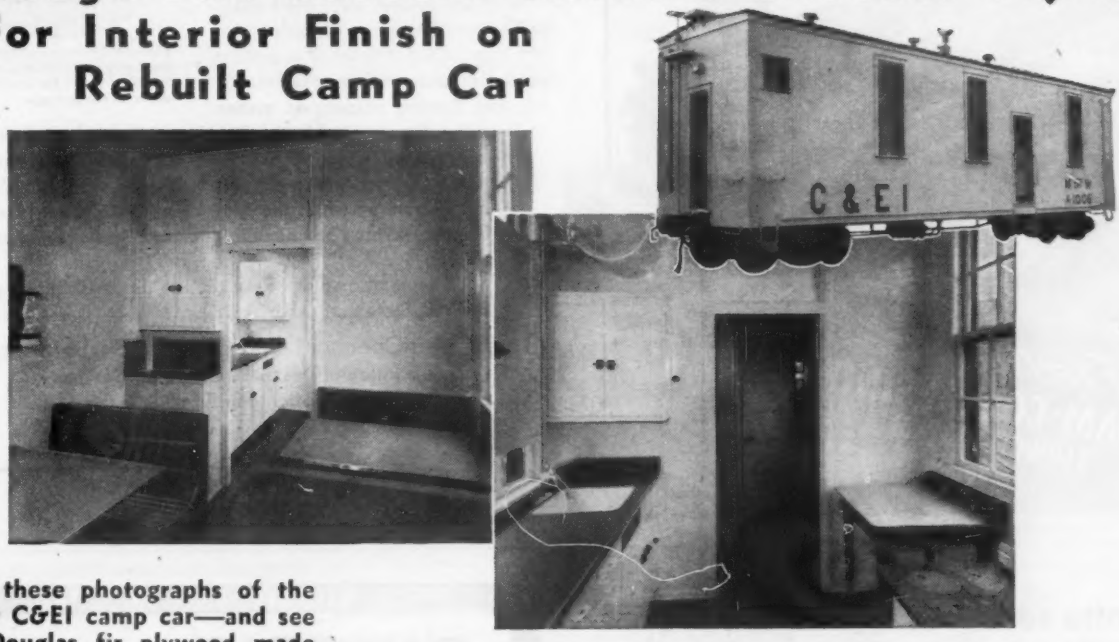

Study these photographs of the rebuilt C&EI camp car—and see how Douglas fir plywood made possible a smoother, more attractive interior. It's another example of the versatility of this strong, rigid, light-weight structural material.

An old 40 foot box car, the inside sheathing was removed and the car straightened up. Then the interior was finished with ½" plywood.

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For recommendations on the use of Douglas fir plywood in car construction or other railroad uses, write or phone: Technical Director, Tacoma, Washington; Field Engineer at 1707 Daily News Building, Chicago 6; 205 East 42nd St., New York 17; 1224 Shoreham Bldg., Washington, D. C. 5; 701 Cogswell Road, El Monte, California.

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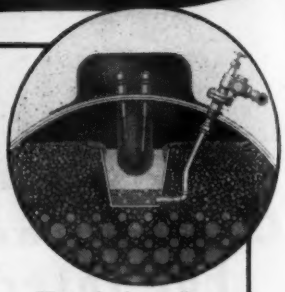

Illustrating foam-collapsing trough and electrodes installed under the steam dome at the dry pipe.

Write for complete data on the Foam-Collapsing Blowoff System.

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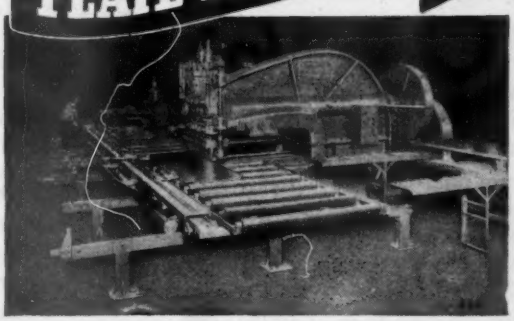

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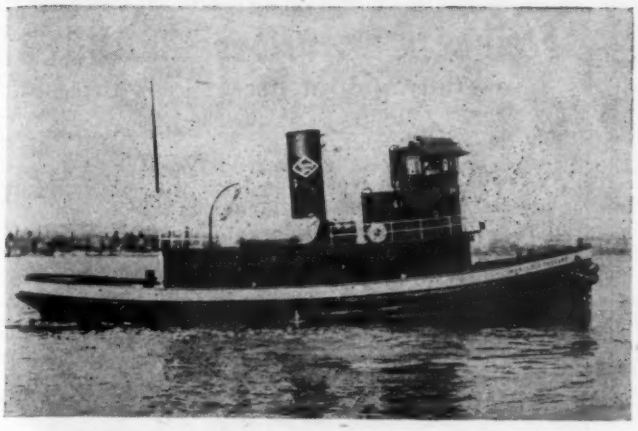

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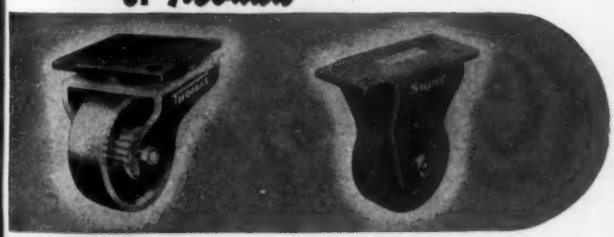

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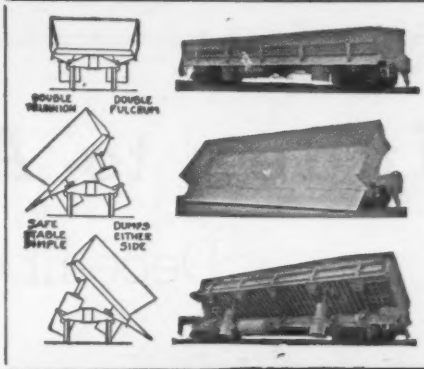

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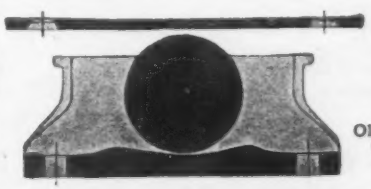

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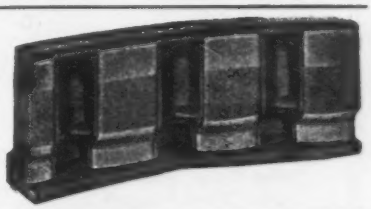

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With completion of the installation between Truro, N. S. and Windsor Junction, N. S. on February 8, 1944, the Canadian National completed 185 miles of G-R-S Centralized Traffic Control between Catamount, N. B. (12 miles west of Moncton) and Windsor Junction, N. S. (16 miles west of Halifax). A comparison of one month's operation on one operating district 124.7 miles long between Moncton, N. B. and Truro, N. S. before and after CTC showed:

The average overall speed of through freight trains increased from 13.84 m.p.h. to 18.06 m.p.h. or decreased from approximately 9 hours overall time to 6 hours 54 minutes, in spite of the fact that 115 more trains were operated over this territory after CTC was installed. Also, the gross ton miles increased from 134,955,395 to 154,749,549 or 14.67% and the net ton miles increased from 62,932,913 to 77,350,643 or 22.9%.

SOME ADVANTAGES THE CANADIAN NATIONAL HAVE REALIZED

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4. Actual figures since the installation show an average reductio of train time by 30%.

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At the start of the war, it was recognized that traffic could not be handled over this vital line with the then existing facilities. A comparison between double tracking and CTC plainly illustrated that if double track were installed, it would cost more and require more time to install and would probably necessitate retiring one track after the war. On the other hand, CTC could be installed in much less time and would pay its way after the war.

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